OCT 1 7 1927

Virginia Medical Monthly

OFFICIAL ORGAN OF THE MEDICAL SOCIETY OF VIRGINIA

Vol. 54, No. 7. WHOLE No. 904. RICHMOND, VA., OCTOBER, 1927 $2.00 A YEAR 20 CENTS A COPY

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Virginia Medical Monthly

Official Organ of the Medical Society of Virginia

Vol. 54, No. 7.
WHOLE No. 904.

RICHMOND, VA., OCTOBER, 1927

20 CENTS A COPY
$2.00 A YEAR

DISSATISFACTION WITH PRESENT METHODS OF TREATMENT OF PEPTIC ULCER.*

By A. M. WILLIS, M. D., Richmond, Va.

Numerous facts tend to show that peptic ulcer is merely a local manifestation of a systemic disorder. As ignorant as we are concerning the etiology of ulcer, specific therapy is impossible and we are faced with the necessity of resorting to symptomatic treatment. Such being the case, we should carefully select those measures which have been found by experience best fitted to afford relief from the local disturbance, without causing the patient to fall victim, at the same time, to an even worse fate. Can we accomplish this best by surgical or by medical means? This question, so fruitful of discord among the two branches of our profession, seems as far from settlement as in the early days of abdominal surgery; and it may be of profit to review briefly the present status of our knowledge concerning what may be effected by the resort to surgery or by subjecting the patient to medical treatment.

In the order of their severity, the commoner surgical procedures for the relief of ulcer are gastro-enterostomy, pyloroplasty, pylorectomy, and sub-total resection of the stomach. Gastro-enterostomy was the first of these operations to be extensively employed, and it is interesting to note the increasing opposition to this procedure.

Lewisohn seriously questions the efficacy of gastro-enterostomy. He states this operation has been employed for over thirty years, and if it had proved entirely satisfactory in that length of time, there would not be the gradual increase in the number of surgeons advocating more radical measures,—a trend which points strongly to the conclusion that failures following gastro-enterostomy are very frequent. Lewisohn believes that the generally accepted figure of 5 per cent for the incidence of secondary ulceration after gastro-enterostomy is entirely too low, due to imperfect analysis. Many surgeons are unaware of the ultimate fate of a large proportion of their patients, considering "only the few patients who come back to their clinic for re-operation." He states a perfect follow-up system is necessary before positive conclusions can be drawn; communication by letter is most unsatisfactory; the patients should be seen and examined at frequent intervals.

By a follow-up system which certainly seems to approximate his ideal in its efficiency, Lewisohn has ascertained the results following gastro-enterostomy performed by himself and his associates at Mt. Sinai during the years 1915-20. He found that gastro-enterostomy, with or without exclusion, effected a perfect cure in less than 50 per cent of their cases. Even more disheartening was his experience as regards secondary ulceration; this was noted in *over* 34 *per cent of his cases.*

Mr. Arthur F. Hurst, Physician to Guy's Hospital, in an address delivered at the Hospital Saint-Michel, Paris, makes the following observations in the discussion of the treatment of duodenal ulcer: "I advise operation very rarely—only when secondary pyloric obstruction is present or when repeated relapses occur in spite of every precaution. I am further persuaded in this course because, as the years pass, the number of patients I see who are suffering from relapses or unpleasant or even dangerous sequels of gastro-enterostomy steadily increases. The result of the operation may be unsatisfactory from the beginning; more commonly only after months and sometimes even years do these sequels appear. It is a remarkable fact that during the last two years the number of private patients who have consulted me for symptoms which have followed a gastro-enterostomy performed for various reasons by various surgeons, many of whom may be ranked among the most skilful and experienced in Great Britain, is approximately the same as the number of those suffering from gastric and duodenal ulcer."

It is a point of some interest that the surgeons who now condemn the operation of gastro-enterostomy almost without exception

*Read by invitation before the Warren, Rappahannock and Page Medical Society, at Front Royal, Va., April 19, 1927.

have a more radical procedure which they wish to substitute in the treatment of peptic ulcer. As Lewisohn points out, there is a growing tendency among surgeons both abroad and in this country to abandon gastro-enterostomy in favor of sub-total gastric resection; and, in two recent papers, excellent reasons are advanced for preferring the latter operation. It is unlikely that the operation of sub-total gastrectomy will become widely popular. Naturally, one is not justified in making the positive claim that serious or fatal results will follow the removal of the acid-secreting cells of the stomach, but the available evidence is such as to make us seriously ponder this possibility. This is especially true when we realize that sub-total gastrectomy for duodenal, gastric and gastro-jejunal ulcer has only been practiced in very recent years. I am aware of no considerable series of cases in which this operation has been done that have been studied over any period of time.

If we frankly and honestly face the facts, we must acknowledge that surgical treatment of peptic ulcer is radical and that it fails in a considerable proportion of cases to give the desired results. What has medical therapy to offer? Is it ever possible to accomplish an actual "cure" of an established ulcer by merely medical means, or is the best we can hope for under this form of therapy temporary relief?

That peptic ulcer may heal spontaneously is now established beyond a shadow of a doubt. Thus, Hart has found that from 8 per cent to 13 per cent of all adult bodies coming to autopsy show open ulceration or the scars of healed peptic ulcers; and Stewart, detailing the necropsy findings at the Leeds General Infirmary for the years 1910-22, inclusive, states that "healing of gastric and duodenal ulcer is a common event."

In a paper read recently before the Medical Society of Virginia, a colleague of mine ably advocated the surgical treatment of peptic ulcer, because he believed that "When one undertakes a cure of peptic ulcer by medical management, the patient should be informed that he may possibly develop cancer, he may bleed to death, or he may have a fatal perforation." How frequently one encounters similar statements in discussions of ulcer therapy; in the hands of the medical man, the patient's future is dark and uncertain; if, however, his judgment is so discriminating as to lead him to entrust his fate to us, he is assured of immediate and permanent relief. Certainly, it would be to the material benefit of all of those who practice surgery to become convinced of this, but honesty impels us to recognize that many unfortunate occurrences may be seen following the operative treatment of uncomplicated peptic ulcer about as frequently as after medical treatment, although there can be no question as to the skill of the operator.

First, there is a primary operative mortality variously estimated at from 2 per cent to 10 per cent, the number of deaths from this cause far exceeding all those arising from duodenal cancer, hemorrhage, or perforation. Recurrence of the symptoms from a failure to cure the ulcer may be seen just as often after gastro-enterostomy as after medical treatment, if care is taken to follow the patient for a sufficiently long period and to rely upon a personal interview and a careful examination from time to time. Gastro-jejunal ulceration, a condition infinitely worse than that associated with the original ulcer, may arise in a considerable proportion of patients subjected to gastro-enterostomy. Clairmont found this complication in 28 per cent; Haberer in 20 per cent; Karl Meyer, at Cook County Hospital, in 25 per cent; and DeTakats in 18 per cent. Lewisohn encountered it in over 34 per cent. By post-mortem examinations, Stewart found this complication present in 18 per cent of a small series of cases. Nor are hemorrhage and perforation disasters encountered only in patients denied the benefits of surgery; both have been reported as causes of death after operative treatment of an ulcer. It is indeed seldom that temporary relief fails to occur in any ulcer patient subjected to hospitalization; after surgery, are we to attribute all of this relief to the scalpel, or is a part of it to be ascribed to the pre- and post-operative rest in bed, regulation of diet, and alkali administration? Sub-total gastric resection may afford relief from the ulcer symptoms, but it deprives the patient of an agent considered essential for the normal functioning of the digestive processes; and a complete removal of the acid-secreting cells may, according to some, eventually lead to the development of a surely fatal disease. With our little knowledge of the etiology of peptic ulcer, one cannot forbear comparing gastric resection for the relief of duodenal ulcer to resection of the sigmoid for hemor-

rhoids, or amputation of a leg for the cure of a syphilitic ulcer,—in other words, the application of capital punishment for a misdemeanor.

We must remember that peptic ulcer in its life cycle is prone to short or long periods of remissions. This fact is responsible for much of the confusion over the so-called cures following surgical therapy, medical therapy or no therapy. Knowing this and nothing of the etiology of the disease, there is some question whether any of these patients should ever be pronounced permanently cured.

In my experience perforation and hemorrhage are the more serious and the commoner complications of peptic ulcer and occur most frequently in patients with a short and atypical history, and in cases where the diagnosis had not been previously made.

Gastro-jejunal ulcer is also not an uncommon complication in my experience, and where it does not result in perforation its cycle resembles that of ordinary duodenal ulcer, with its remissions and exacerbations.

Aside from obviously surgical conditions, such as obstruction, hemorrhage and perforation, the chief complaint of the patient with peptic ulcer is pain. Apparently, so impressed have we been by this that we have come to regard relief from pain as indicative of the patient's cure; but, as a matter of fact, the disappearance of this symptom, pain, is absolutely valueless so far as carrying proof of permanent relief. This temporary cessation of pain in the average ulcer patient may be brought about not alone by surgical operation, but just as certainly by appropriate medical treatment; indeed, it has been reported many times in the absence of any intentional treatment whatsover.

Experience indicates that in chronic ulcer of the stomach, because of the possibility of cancer transformation, in *duodenal ulcer* with *pyloric stenosis*, in *some cases of hemorrhage*, and, obviously, after *perforation of any ulcer*, *surgery is clearly indicated.*

From visits to the various surgical clinics, from a study of the current literature and from my own clinical experience the conclusion is inescapable that there is *justly* an increasing dissatisfaction with the present surgical methods in the treament of uncomplicated peptic ulcer.

Unfortunately, the close co-operation between surgeon and internist that has so often been invoked in papers on this subject is far from a reality. It is too apparent that many of the views expressed are partisan. Until more knowledge is gained as to the nature of peptic ulcer, progress in treatment is only possible through an agreement as to principles of management and close adherence to these principles by all concerned.

THE GENERAL PRACTITIONER AND THE SMALL HOSPITAL.*

By PHILIP S. SMITH, M. D., F. A. C. P., Abingdon, Va.

The general medical practitioner is as old as human needs. Mankind has never been willing to suffer and die without the appeasing influence and attendance of the healer, doctor, surgeon, or medical adviser of some kind. The service may have been rendered by the priest or barber, but it satisfied even though it failed to cure, for nothing better was available.

The hospital is a comparatively modern innovation. While surgical procedures (circumcision) were practiced in the days of Moses, and lithotomy, trephining and other body cavities opened by the early Egyptians and their contemporaries, the successful, organized institutional care of the sick awaited the epoch-making contributions to medicine of Lister, Pasteur, Koch, Crawford Long, of Georgia, and others, during the last century.

With the advent of the hospital there gradually developed doctors of different types, depending largely upon the character of the work undertaken by each. From this evolution the so-called hospital doctor and general practitioner, as distinct medical workers, finally emerged.

It is axiomatic to state that the physician in general practice has his problems, both numerous and trying. It is not so generally admitted, but it is equally true, that the hospital doctor has his burdens, in many respects of a different character, but quite as harassing. The foregoing statement will probably be questioned by some who have no intimate knowledge of hospital problems.

To indicate that the two groups of doctors mentioned have at least three problems in common, and some practical suggestions with the hope of provoking consideration of a mu-

*Read by invitation before the Clinch Valley Medical Society at Norton, Va., April 29, 1927.

tually helpful plan, is the purpose of this paper.

The first of these mutually applicable responsibilites is the fact that both intra-mural and extra-mural physicians serve the sick. As a corollary to this statement, physicians, in turn, must be paid an adequate monetary consideration by the patient. This constitutes the second problem of the medical profession generally. Third: To render efficient service to the patient, the doctor, regardless of the character of his practice, must make provision for keeping abreast with the advances and ever-broadening scope of medical knowledge.

Let us now for the moment consider the peculiar problems of the general practitioner. In recent years our medical journals have been so replete with articles reflecting the trials and difficulties of rural and small town practice that it would be superfluous to do more than refer to them in passing. The long hours, the impossibility of arranging the daily program of work in an orderly fashion, the insufficient opportunities to study and read, the physically exhausting travels in automobiles and on horseback, the difficulty in providing proper education for the children in nearby schools, the lack of helpful contact and exchange of medical ideas with fellow practitioners, the inability to leave one's clientele for post-graduate study, and the miserably inadequate remuneration for his services,—all these and many more disadvantages have been discussed frequently in our medical societies and journals. And there is none to refute them, nor can they meet with anything but the most sympathetic consideration of their fellow practitioners in offices and hospitals.

Other handicaps of the general physician have recently arisen, and in the minds of some constitute problems even more serious than those enumerated. For example, there has been spirited discussion of the invasion of the field of general medicine by the State Board of Health. By many doctors such activities are regarded as an unjustifiable encroachment. Where such State supported medical service is rendered *gratis* to those in financial position to pay, there is little ground for rebuttal to the argument of the local doctor. On the other hand, we freely admit our personal obligation to the public we serve in the matter of preventive medicine, even though its objective and successful attainment diminish our incomes proportionately as the morbidity and mortality rates are reduced. Can we, therefore, consistently fail to adhere also to the principle of the State's obligation, in a general, systematic manner, to prevent and relieve sickness, especially of the contagious type, among the indigent?

The general practitioner is doubtless correct, too, in stating that his influence and income have suffered by reason of the so-called "specialist" and hospital doctor. Once the sole medical adviser of the family, he is now confronted almost daily with the fact that he is no longer so. Not only are his patients seeking other sources of medical advice, but, in many instances, the patient returns and publicly minimizes the skill and ability of his family physician. Is there wonder that on the programs of our medical society meetings there appear such subjects as "The Passing of the Family Physician?" Such papers presented by the men in rural and small town practice reflect their pessimism rather than their sober judgment.

Competition has developed with unscrupulous individuals, without training even in the fundamentals of medicine, who pose as "specialists." Many such are swelling the ranks of the numerous varieties of modern cults; their rapidly increasing number attests their financial success. Even the graduate from an accredited medical school who practices a specialty with no real preparation is unworthy of the confidence and respect of his fellowman. They are conscienceless parasites of a suffering, groping humanity. However, few will deny that the field of medicine has been so greatly enriched and broadened during the past fifty years that none of us can encompass more than a small part of the scientific and practical knowledge of diagnosis and therapy. Hence, there is an admitted need of the honest man who has received specialized, intensive training in some particular phase of medicine. Undoubtedly, he is better prepared than the average doctor to recognize and treat the more obscure and difficult pathologic conditions in his particular specialty. Furthermore, it will not be denied that the patient's interests are of primary importance and that he is entitled to such consultation, if his condition warrants it. But, the patient's welfare is much better promoted if he be referred by his family physician to the specialist, when needed, rather than by haphazard, independ-

ent action on the patient's part in selecting such a consultant.

Now let us consider the problems confronting the hospital and hospital worker. I have in mind particularly the small hospital of less than forty beds without endowment or State aid,—hospitals whose entire income depends upon earnings from its patients.

There are at present approximately 6,946 listed hospitals in the United States having a total capacity of 859,445 beds. Exclusive of Federal and State institutions, there are 460,908 beds, or one bed to every 260 inhabitants.[1] The ratio is far in excess of that which prevails in Clinch Valley and other similar communities. Including Bluefield, you have in this Valley ten hospitals of approximately 275 beds serving a population of about 200,000; this represents one bed to every 728 inhabitants. Most of these institutions have come into existence during the past ten years and reflect the fact that sick people in ever increasing numbers are going, or being sent, to hospitals.

Dr. W. S. Rankin, Director of the Hospital Section of the Duke Endowment, has recently published a valuable paper entitled, "The Needs of Rural Medicine in the Carolinas."[2] After demonstrating the fact that the distribution of medical personnel and hospital facilities is rapidly gravitating into the larger cities, he discusses the medical needs of the typical rural county as follows: "The county we have in mind is one of 30,000 population, 500 or 600 square miles in area, with no town larger than 5,000 or 6,000 people, a county typical of the South. With an average amount of illness per thousand people, that county would have constantly ill 25 persons per thousand, or a total of 750 cases of bedridden illness. Of these 750 physically incapacitated, ten per cent of them, that is, 75, are so seriously ill as to need hospital care; and of the 75, one-third of them can receive hospital care only at the expense of others; that is to say, there are 25 charity hospital cases." These figures, he states, do not include the still larger group of people, physically impaired from 10 to 50 per cent in efficiency as wage earners, and yet not bedridden. Many of this type need hospitalization.

That the hospital has come to stay and serve a definite need in our body politic cannot be denied. Nor will the sick public now tolerate the inconvenience and expense of being transported long distances to the large city hospitals in any but exceptional cases. The average individual utilizes his local lawyers, churches, schools, etc., and he expects competent hospital service to be afforded in his community. Such small hospitals as we have in Holston and Clinch Valleys are intended to supply this demand, but their management, both from the financial and professional standpoints, is becoming increasingly more burdensome. Some of the problems connected with the conduct of small hospitals must be reviewed very briefly.

The question of hospital finance is interwoven very intimately with the professional care of the patients, for the more efficient the professional service the greater the cost of operation. For instance, in the institution with which I am connected we have seen, in spite of every effort to avoid waste, the cost per diem per patient increase more than 20 per cent since 1920,—and this in the face of a 74 per cent increase in the number of patients admitted. This has not resulted from a rise in the price of food, fuel, hospital supplies, etc., but is rather an expression of the ever-enlarging requirements of the organizations concerned with hospital standardization. Unless these suggestions are complied with, the hospital loses its standing and recognition. Furthermore, the patient, himself, is constantly demanding more conveniences and expensive service.

The recent "Hospital Number" of the *Journal of the American Medical Association* illustrates the point in mind. In addition to the long list of "essentials in a hospital approved for intern service," including number of beds, character of staff, clinical laboratory, X-ray facilities, hospital records, medical library, anesthesia, dietitians, and various specialized professional services, a statement is appended that after January 1, 1928, a recognized hospital must show records of necropsies in at least 10 per cent of all deaths. None will deny the value of autopsies, but many will rise to inquire how they can be obtained frequently from the family of the deceased patient in a small Southern hospital.

The problem of financing the patient without funds constitutes a constant source of embarrassment to the hospital. The father of a large family who develops peritonitis, and who is deposited at the hospital door admitting that he has nothing of this world's goods, but only a fearful "misery" in his belly, cannot

1. J. A. M. A. Vol. 88, Mar. 12, 1927.
2. Southern Med. Journal: Vol. XX, No. 3, Mar., 1927.

be declined. Nor can these patients with surgical emergencies be transported safely to the distant State supported hospitals. The State treasury which cares for the indigent tuberculous, insane and epileptic patients, should make more general financial provision for such acutely ill unfortunates without hospital means.

Our sister profession, nursing, is also, unintentionally, contributing its share to the growing burdens of the hospital. The applicant to the training school is required to be of a certain age and to have at least two years of previous high school education. When admitted she is supplied with uniforms, books, laundry, room and board; is taught *gratis* her profession and given usually a monthly allowance for necessary expenses. Less time to nursing patients and increasing hours devoted to recreation and class-work are being enforced. Full-time registered instructresses are urged as necessary in addition to the teaching given by the staff of doctors and graduate nurses already employed. The curriculum imposed is rapidly approaching that of a medical school with the result that, in some instances, poor doctors are being graduated instead of competently trained nurses to care for the sick in a practical manner. The latter type of nurse is now in great demand.

Full-time dietitians are recommended. Most of the smaller hospitals are required to affiliate with the larger ones to give specialized training in certain subjects to pupil nurses: such a policy encourages prospective nurses of the better type to go elsewhere than to their local hospitals for training. Many such do not return after graduating to their communities for the practice of their profession. Revenue to the hospital has been curtailed as the result of limiting its pupil nurses to a maximum number of days for special duty work during their course of training.

In view of these and other nursing problems, it is probable that in the future the small hospital will either have to utilize graduate nurses, if available, exclusively for routine floor duty, or else give only fundamental training to pupil nurses for a period of 12 to 18 months and graduate them as "practical nurses."

I have indicated that the general practitioner and the physician in the small hospital have three problems in common:—the patient's needs, the doctor's adequate remuneration, and the necessity of constant acquisition of new, worth-while medical knowledge. How can these objectives be effected to the mutual benefit of both classes of physicians concerned? I have no panacea to prescribe, but the belief that the problem can be solved, in part, requires no excessive optimism.

The suggestion of state-controlled medicine is advanced only to be condemned. It is foreign to our American heritage and to our professional ideals.

"Fee-splitting", though widely practiced in the effort to equalize the remuneration and establish a working basis between the intra- and extra-mural physician, disregards the best interests of the patient and violates our accepted code of ethics and honor.

Paradoxically, I believe the solution of the problem can be found in the number of small hospitals now in operation. During the past twenty-five years there has been an increase in the United States of more than 250 per cent in the number of hospitals, and this does not include the large list not accredited by the various states. Reliable figures can be quoted to show that in the large cities both the number of physicians and hospital beds per 1,000 patients are far in excess of the ratio existing in small town and rural districts.

The city physician can and does charge more than the profession elsewhere for equivalent services. But this difference in fees is probably more than offset by the former's greater living and professional expenses. How is the city practitioner solving his problems? Many of the more alert and better informed have affiliated themselves with one or more hospitals. Others, in increasing numbers, are trying to qualify themselves so as to establish similar connections. The requirements imposed by such open hospitals are not unreasonable, but are sufficiently rigorous to exclude the man of inferior training and ability.

In Southwestern Virginia most of the counties have at least one small hospital; others will be operated in towns of more than 5,000 people. Can they survive the increasing competition? It is believed they can if they are located properly, financed in a business-like manner, and, more important still, are prepared to render efficient service to the patient. The last named condition implies much, but has especial reference to a competent, well-balanced staff. But, it may be reasonably argued, a 25 bed institution cannot be expected

to maintain a full-time corps of doctors representing all the various specialties in modern medicine. The answer to this argument determines the value or worthlessness of my paper.

Given a hospital of 20 to 40 beds with a competent resident surgeon, and located in a small town, what suggestions can be offered for successful operation that will at the same time benefit rather than injure the general practitioners in the adjacent territory? The plan now so prevalent in the large cities, with certain modifications, is presented for consideration.

Good roads and automobiles have made the small hospital generally accessible. Under the plan we have in mind, by mutual agreement among the neighboring doctors, let Drs. A. and B. qualify themselves to assist the resident surgeon and care for the surgical emergencies during the latter's absence. Have possibly two other general practitioners devote special attention to internal medicine and serve the hospital and community in that capacity. The X-ray, anesthetic, urological, pediatric, gynecological, and other departments can be similarly provided for. It is not suggested that the participating doctors should abandon their former activities, for the income from such special work would not justify such a course, nor could they be spared by their former clientele.

It is also noted that the proposed hospital should have a full-time competent surgeon. This provision is thought necessary to safeguard patients from ill-prepared operators, lacking experience, surgical judgment and manual dexterity. Here, the self-evident statement should be stressed,—that the family physician referring a patient to the surgeon for operation should present and collect an adequate fee from the patient for his diagnosis and other services.

Reference to the obstetrical service was purposely omitted. After several years of practice, the average general physician is a competent obstetrician. Yet, pregnant women in increasing numbers are entering hospitals for delivery. They are impressed with the aseptic provisions in the institution, the nursing attention, the modern methods of alleviating the dreaded labor pains, the immediate perineorrhaphy skillfully done when needed, and the all-important ante-partum and post-partum treatment. In addition to attentive prenatal care, the general practitioner should encourage those patients who can finance hospital delivery to avail themselves of it; and he should retain control of the patient after entering the institution. If he is not qualified to offer the patient this superior type of obstetrical service, she will pass into other hands.

The patient with the problem difficult of diagnosis should be afforded the benefit of consultation, X-ray and clinical laboratory aids in the hospital when needed. The requests for such special examinations should come from the attending physician to whom the reports are submitted. After the diagnosis is made, he should retain control of the patient's medical treatment whether in or outside the hospital.

Under the plan proposed, mutual exchange of skilled consultation service would be available at small cost to the patient. Such an arrangement, to be worth-while and successful, necessarily implies adequate, specialized post-graduate training on the part of those participating in it. Furthermore, it is based fundamentally on a broad, mutually helpful spirit of co-operation and a zealous interest in promoting at all times the best interests of the patient.

As aids to perfecting such a plan, a reference library, with standard text-books and a varied assortment of medical journals, should be maintained in the hospital. Standard rules of medical practice should be enforced; adequate written clinical records made compulsory and filed in the hospitals; necropsies done whenever available and the pathological findings recorded with other data connected with the patient. Hospital and professional accounts should be kept and rendered separately. Provision should be made, if possible, for charity beds whether the hospital is controlled by stockholders or is a community institution. Finally, frequent stated meetings of the clinical staff should be held for discussion of the professional work, and all members should be urged to attend and participate.

In conclusion, it is recognized that the suggestions proposed have inherent difficulties not possible of solution in all details, but in principle the plan is not impracticable. Much would depend upon the personnel, professional enthusiasm, ability and co-operation of those interested in its success. If accomplished, the financial burdens of the small hospital would be lightened through increased patronage; the better qualified general practitioner could more easily retain his clientele; incentive to

legitimate professional advancement and proportionately increased income could be anticipated; and, finally, the chief objective of every right-thinking disciple of Hippocrates,—the most efficient service to the individual patient, to whom we, consciously or not, have dedicated our lives,—should in itself commend the plan for earnest consideration.

Johnston Memorial Clinic.

LOSS OF VISION WITH ENDOCRINE PHASE.*

By WILLIAM C. MOOMAW, M. D., Petersburg, Va.

This case is reported not because the writer knows very much about it, but with the hope that some of you, having had a wider experience with similar disorders, might enter into a discussion which may throw light on the problem, if problem there be. In truth, what seemed to me to be perplexing, might appear to you a very simple condition. Therefore, in order to bring the case before you, I desire to present it in more or less detail.

Case Report

G. T. K., white male, forty-five, married, bookkeeper. Family history negative. Had measles, mumps, and "chills" when a child ten years of age. Personal history otherwise negative.

On August 31, 1926, the patient was examined at my office. He complained of failing vision dating from the previous June, insomnia, loss of appetite, loss of mental and physical urge. He had worried a great deal over his wife's illness of several months in the hospital, over his own condition, and over the state of his finances. He was depressed to the point of melancholia. For insomnia he had taken bromides and veronal for several months,—of the latter, three or four tablets daily.

In weight he was much reduced, his color was bad, he had some digestive disturbance with gas, but his elimination was fair; he was a light smoker, and small eater.

The examination revealed average, adult, chronically infected tonsils, and more or less infection of the teeth.

His vision at this date was 20-40 and 20-100, with anterior, media, and fundus findings practically negative. The eyes presented the semi-stare of organs with loss of vision; that is, they were slow in movement and adjustment. Vision was somewhat better in subdued light.

Before entering upon any treatment, I requested a thorough general physical examination, which was duly made in a Richmond clinic, as follows:

"General physical examination showed rather definite evidence of some organic trouble with his central nervous system. There was a lateral nystagmus. His pupils were unequal, the right being smaller than the left. Both reacted normally, but the left less actively than the right. There was slight slurring in his speech. His knee-joints were quite sluggish, but obtained on reinforcement. Babinski was positive on the right, and his Gordon also. His Romberg was negative. His teeth showed evidence of infection, and the tonsils appeared diseased. His radial vessels were more sclerosed than one would expect at his age. His blood-pressure was a little low. I could make out no trouble in his lungs, and examination of his abdomen was negative, except for definite tenderness on pressure in the region of the gall-bladder. Examination of his nose, throat, and sinuses (by a local specialist) was reported negative, except for definitely diseased tonsils. He advised tonsillectomy.

"Dental examination showed the upper right first molar, the upper left first molar, and the upper right second molar pulpless, with evidence of apical disease, and hopelessly diseased by pyorrhea. The upper and lower anterior teeth were diseased by pyorrhea. There was present in the region of the upper right bicuspid a metallic looking foreign body which appeared to be a broken off instrument used some time ago in the treatment of the canals of this tooth previous to its extraction. The dentist advised treatment for pyorrhea, extraction of the upper left first molar and the upper right first and second molars; following this the insertion of plates to restore function.

"Proctoscopic examination was reported entirely negative. A specimen of mucus from the bowel was sent to the laboratory for examination for amoeba. Careful search failed to show any organism.

"Blood examination showed a hemoglobin of 74 per cent, with 3,700,000 red cells, and a normal white and differential count. Uri-

*Read before the eighth annual meeting of the Virginia Society of Oto-Laryngology and Ophthalmology, at Charlottesville, Va., April 30, 1927.

nalysis was entirely negative. Examination of his stool was negative. Gastric analysis showed free hydrochloric acid 18 per cent, combined 10 per cent, with a total acidity of 28 per cent. There was no occult blood, and microscopically it was negative. His renal function showed 46 per cent phthalein output in two hours' time. His non-protein nitrogen was within the limits of normal. His blood Wassermann was reported negative.

"A cystogram of the gall-bladder was made following the administration of Graham salt. This study showed a markedly diminished accumulation and concentration function, and also a diminished after-meal elimination, indicating a probable pathological gall-bladder.

"From these examinations, it will be seen we found several definite foci of infection which could have a bearing on his eye condition as well as his general physical shape. In view of the neurological findings, we feel he should certainly have an examination of spinal fluid before anything else is done. If this should throw no further light on his case, he should have the dental treatment outlined, a tonsillectomy, as suggested, and, following these operations, general measures directed towards building up his weight, strength, improving his anemia, etc. After several months, if his improvement does not become definite, the removal of his gall-bladder should be considered."*

On September 21st, the patient again presented himself to me, and we found his vision at this time to be 20-50 and 20-200, with no changes in the eye-grounds. On this date, I operated for removal of his tonsils, leaving a perfectly clean throat. Early in October, he began his dental treatment along the line suggested by the clinic, and immediately had his mouth put in order. While having his dental treatment in another city, he called to see a prominent specialist at my request, who afterwards wrote me in part, as follows: "All of my impressions of Mr. K. were that the trouble lay elsewhere than in the eye. Distant objects look smoky, cannot focus quickly, light sense poor, temporal side of right disk rather pale, left disk questionable, fields good."

We saw the patient again on December 8th, only to have our hopes and expectations crowned with humiliation and despair;—there was no improvement whatever. The patient sat in gloom, with face buried in his hands. Empirically, we prescribed maximum doses of potassium iodide, which led only to further disappointment.

Later in December as this miserable man sat in my office, there came to me, probably subconsciously, the hint that likely there was an endocrine phase in this case,—a vicarious factor of internal medicine, however, about which I know practically nothing. I wrote to one of the most reliable biological pharmacists, describing the case in detail, and received in reply assurance that it seemed a plain case of glandular insufficiency, particularly of the suprarenals. A supply of the proper glandular extracts was forwarded, including one grain tablets of suprarenal gland extract, and one grain combined glandular extract, with complete directions as to administration.

The patient began at once to improve, and maintained a steady and consistant convalescence. In March, his vision had returned to 20-15, O. D. and O. S., he had gained thirty-five pounds, had a good color, slept and ate well, was entirely free from all psychic disturbances, and was daily at work.

After deciding to report this case, I wrote to my friend, Dr. Clyde E. McDannald, of New York, for such information as he could draw from his rich experience with similar disorders of the eye. He, in turn, reviewed the history of this case with several eye men, including Dr. Arnold Knapp. The letter is as follows: "The consensus of opinion seems to be that this was a case of toxemia of some sort with a probable relative central scotoma which could have been brought out only by careful field plotting with a 1 m.m. test object. The feeling is that, if it was a pituitary affair, you would have had an hemianopsia or something of that nature.

"The opinions expressed were to the effect that it might have been a menopause (male) in which instance it would be likely to respond to endocrine therapy, a possible but not probably generaly paretic, but more apt to be the result of the veronal he was taking. Veronal, as you know, will affect the vision quite seriously, and if the poisoning is pronounced, complete recovery of sight does not always take place. Certainly the case is one of more than ordinary interest".

The writer is not conversant with recent literature dealing with the relations of the endocrine system to ophthalmology, but Casey A. Wood, in The Year Book of 1922, has this

*The spinal fluid was subsequently examined and reported negative.

to say: "It is becoming increasingly apparent that endocrinology is a biologic conception which is fundamental and essential to our understanding of vital reactions in health and disease. This alone, as pointed out by P. Friedenberg, makes it incumbent on ophthalmologists to familiarize themselves with the data already obtained and to apply them intelligently to the recognition, and, eventually, to the treatment and prevention of ocular disturbances. Recognizing a certain endocrine predominance in definite categories, we shall, as thinking physicians, put a different and an added interpretaion on sex, age, race, environment, climate and diet. The term constitutional, applied to disease or to treatment, must include the study of the glands of internal secretion. Such varied factors as specific disease, tuberculosis, rheumatism, focal infection, the lymphatic diathesis—formerly labeled scrofula,—are not only potent in producing the histologic changes recognized so early by the cellular pathologists of Virchow's era, but they also profoundly affect the internal secretions and the glands which supply them, and so bring about prepathologic or ante-organic changes which those who know can recognize beyond a doubt."

Experimentally and clinically, W. Zentmayer found that extirpation of the thyroid gland in dogs is sometime followed by corneal infiltration which in some cases leads to ulceration and ectasia. He also noted lachrymation, conjunctivitis and even partial blindness *without ophthalmoscopic changes* after removal of this gland.

One more short paragraph from Wood: "At present we have no direct evidence that the ocular complications of disease of the pituitary body are produced other than by direct pressure and increased intracranial tension; *but*, the 'antecedent amblyopia' of de Schweinitz, the frequent variability and at times transient nature of the disturbance of visual function, the beneficial effect of glandular therapy on the amblyopia in some cases of undoubted hypophyseal disease, and the fact that oculomotor disturbances have been met with, due to change in the basal nerves *not* the result of pressure, suggest that disturbed secretion of the pituitary gland may also be a factor, especially in the early state of the affection."

Briefly, by way of summary, we have here, then:

1. A case of partial blindness without ophthalmoscopic changes, but with systemic disturbances.

2. Several foci of infection.

3. Drug addiction of short period though with a drug of possible toxic properties.

4. No apparent improvement from operative procedures even after lapse of three months.

5. Immediate and rapid improvement after administration of glandular therapy.

Conclusion: This would seem to be a case of toxic poisoning which produced not only the amblyopia but which depleted the endocrine system and perverted the function of internal secretion. It is more than likely that improvement would eventually have ensued, but it is also more than likely that the glandular therapy materially hastened the restoration of arrested glandular function, and established desirable systemic stability, both of which were basic factors in the improvement of vision.

14 *Marshall Street.*

THE PROPHYLAXIS OF DIABETES.*

By THOMAS J. TUDOR, M. D., Norton, Va.

There are today in the United States probably a million people suffering from diabetes mellitus. Think of one out of every hundred of the population having this disease. In Boston and New York statistics show one out of every fifty deaths from this cause. Perhaps, if the causes of deaths elsewhere were recorded with the same scientific accuracy, the figures would be as high all over the nation. The fact that in Boston and vicinity the amount of insulin used today is practically twice as great as that over the country as a whole cannot all be accounted for by the migration of diabetics to the specialists of that city for treatment, but it must mean that elsewhere some diabetics are not diagnosed.

Diabetes was described by the ancients in medicine back to Celsus, but Claude Bernard's discovery in 1857 of the glycogenic function of the liver was the beginning of real progress in knowledge of this disease. Curiously enough, however, to this day it is maintained that disease of the liver, the weight of which is 1/10 sugar, does not cause diabetes. Neither does nephritis, though the renal threshold, that is the point of blood sugar accumulation,—normal in health from .08 per cent to .12 per cent,—at which sugar begins to be eliminated

*Read before the Clinch Valley Medical Society, at Norton, Va., April 29, 1927.

in the urine, is a very vital matter in diagnosis. Unfortunately this threshold is variable, and higher, as a rule, in nephritis and in the aged, usually ranging from .15 per cent to .2 per cent. In actual diabetes the blood sugar content is usually from .2 per cent to .4 per cent, but there is no constant relation between the amount of sugar in the blood and in the urine.

Diabetes occurs at all ages, but half the cases in children occur between the ages of ten and fifteen, and half the adult cases in the fifth and sixth decades. In childhood, over height is found in a large percentage of the cases, and the "long lean Cassius" girl or boy should excite our suspicion. Up to thirty-five, insurance statistics indicate we are safer if a little over standard weight, while after thirty-five the risk of obesity is great, for, if one misses diabetes, the degenerative diseases are an ever dreaded menace.

Glycosuria occurs in disturbances of the nervous system. Puncture of the floor of the fourth ventricle has been recorded for years as a cause but animal experiments prove that this will not occur after removal of the adrenal glands. So far as we know, the pancreas stands alone in its action, through its islands of Langerhans, in increasing the ability of the system to handle sugar, while it has been proven that at least three of the other glands of internal secretion—the suprarenal, thyroid, and posterior lobe of the pituitary,—by their overactivity, tend to produce glycosuria, and the underactivity of any or all of these tends to increase sugar tolerance. Hyperthyroidism is frequently accompanied by glycosuria and sometimes by true diabetes, and Cushing and others have demonstrated the frequency of glycosuria in cases of acromegaly. Glycosuria occurring in pregnancy, in the acute fevers, in septic conditions, after anaesthetics, after the administration of salicylates, in gout, cachexias, anemias, and with carbuncle cases, may be transitory, but should never be considered so until repeated urinalyses and watching convince us that we have not a case of diabetes. This is imperative as regards carbuncle.

Fifty per cent more cases occur in men than in women, and it is much more frequent among the well to do than among the poor. The Jews have more cases than any other class and the Negroes fewer.

Tremendous strides have been made in the curative treatment of diabetes since the recent discovery and popularization of insulin, but insulin has served to strengthen rather than to weaken our faith in scientific accurate dietetic regulation. Our success in prevention must come largely through education in eating properly.

Should we go hungry in a land of plenty? Some one has aptly said that the people live on one-third of what they eat and the doctors on the other two-thirds. Whether we believe in evolution or not, I think we all admit that our bodies were so constructed, certainly away back in our ancestry, that they were suited for the assimilation of fruits, berries, herbs, leaves, etc., when eaten raw, and less adapted to dried nuts, tubers, meats, etc. In other words, by nature we are vegetarians, and the green vegetables, to say nothing of their vitamins, suit us much better than dried beans, rice, and other dried carbohydrate foods. The cheapness of these dried carbohydrates, the readiness with which they are prepared, or purchased ready prepared to be eaten from a can, the abundance and low price of sugar, which, when Columbus discovered America, is said to have sold in London for $276.00 a pound, coupled with the fact that these foods are powerful and quick energy producers, have made us over-indulge in these articles. Since the attempted abolition of alcoholic beverages, there has been a tremendous increase in the consumption of candies. In 1926, with Denmark, we led the world for the year in a per capita sugar consumption of 118 pounds. The next highest were Great Britain with ninety-three pounds, Canada ninety, Holland eighty-nine, and Switzerland eighty-three. Add to this the dried cereals, etc., which are converted into sugars before they are utilized, and we can understand the breaking down of our bodily powers which have to do with the assimilation of these foods. There are diabetics actually voiding three-quarters pound of sugar daily with the urine, and some eliminate in this way one to two barrels annually.

Fortunately, the light is breaking into a new day. Our people know that they ought to eat green foods in abundance and certainly twice daily. We should popularize raw fruits for dessert, and we ought to learn to appreciate their real flavors and not camouflage their delightful taste with sugar. I hope ere long every housewife will consider it improper to serve cooked fruits, or jellies and jams, when raw fruits are available.

Perhaps no single predisposing factor has produced half as much diabetes as obesity, and we know that, as a rule, obesity comes from too much food and too little exercise. Every normal adult in health should have exercise daily the equivalent of a five mile walk. It is said that the brain workers in Paris, the home of the best cooks on earth, show diabetes in 10 per cent of their number. Heredity was long considered a predisposing cause, but we now believe that it is hereditary eating habits,—one generation of heavy eaters following another. Conjugal cases likewise must come from the exposure of the two to the same abundance of food rather than to one another.

How can we fit our diabetic program in with the effort of the years for the building up of the thin, by feeding undernourished school children to ward off tuberculosis, etc., with hot lunches at the expense of the taxpayers, and by the propaganda of the manufacturers and growers for a bigger consumption of their foods? Luckily, it seems that, in the presence of tuberculosis, cancer, or syphilis, rest and over-feeding will not cause glycosuria. However, there does seem to be a real menace in the forced feeding, usually accompanied by rest, following the acute diseases. A typhoid convalescent, for instance, has every muscle and organ of his body weakened, and it is not logical to expect the pancreas to be an exception. This is doutbless the reason for the frequent history of the symptoms of diabetes following soon after recovery from a severe illness. Here, again, safety lies in the character of the diet and an earlier return to green vegetables and fruits with a limitation of the starches. The lesson runs like a scarlet line all through our studies that the sugars in the raw fruits and the carbohydrates in the green or raw vegetables can be taken in greater abundance with impunity than in the dried foods, either fruit or vegetable.

Joslin has said that scales are as important in the handling of chronic cases as the thermometer is in the care of acute diseases. We cannot use scales too often. Frequent urinalyses, specimen to be voided two hours after a full meal in which some sweet is eaten, seeing that the specimen is left in the boiling solution five full minutes regardless of any hurry, repeated examinations when we are suspicious, glucose meal test, blood sugar test,—all these will help us in our diagnosis. Periodic health examinations are becoming more and more popular. Examination on one's birthday regardless of how well he feels or looks, or, I have wondered, if we could impress upon those who drive cars that, when they put the alcohol in the radiator and fix the car up for the winter, and again when the engine is cleaned and the alcohol drained for the summer, they need a physical examination as well as the car. Both of these seasons are particularly suited for such, the one in anticipation of the rigors of winter, and the other as a safeguard against the hazards of summer. Nothing less than semi-annual examinations should be considered adequate for children under-weight or over-height, adults over-weight, and all adults past forty.

Some one has said that the sooner we discover the diabetic, the longer he can be treated. Let us regard the tall slender candy eating child and the obese adult, especially past thirty-five, with the same concern as regards diabetes that we do the case of bronchitis, recurring every winter, in whom we can find no other sign of tuberculosis. Remember that statistics of some of the insurance companies indicate that diabetes is a disease of all ages, and that while, as we grow older, the tendency to the constitutional diseases increases, the tendency to diabetes does not increase with age in the absence of obesity. Only about 10 per cent of all cases of diabetes occur in the under-weight, 15 per cent in normal weight, while all the remaining 75 per cent come in those above normal weight.

Our health boards are about to launch longevity clinics. Our knowledge of these matters must reach the masses. We are finding these diabetics late. We must get them early. Every diabetic and every member of the family of a diabetic is a missionary in the prevention of the disease. They will test specimens for sugar in their own families and in the families of their neighbors and they will bring the patients in. True they will make some errors in diagnosis, but they have a pardonable pride in preventing others from having to live through the tedious and tiresome self-denial of food restrictions. Under careful dieting and treatment, the diabetic usually lives a long time, and his self-denial may give him more will power,—beautiful to sermonize on, but hard to stand. If we can caution these big eaters, these pre-diabetics, we can do a tremendous amount of good. It is a thousand times better to coax the little boy on the street to

put out his bonfire, than to come by an hour later and call out the fire department in time to save half the home.

348 *Oak Street.*

DISEASE, PAST AND FUTURE.*

By HARRY T. MARSHALL, M. D., University, Va.
From the Laboratory of Bacteriology and Pathology, University of Virginia.

Section I.

Disease has always made a varied appeal to the thought and imagination of mankind. The anguish or heroism of the victim; his disability or victory over infirmity; the distress of relatives and dependents, and the sweep of pestilence are themes which have attracted the historian, the poet, the tragedian, and the philosopher.

The votaries of every religion have tried in turn to read into disease some expression of the ruling deity, and through faith and formula have sought to achieve both cure and prevention. Disease is but one form of human suffering, which, along with sin, destitution, misfortune and death, constitutes one of the great mysteries ever confronting and baffling mankind. The "mystery of evil" is woven into the thought of the great religions. From the time that Job heard the Voice in the whirlwind to the present, the enigma of human suffering and implacable fate has continued to be one of the insoluble mysteries of the universe, and has forced human beings to the answer of faith, if an answer is to be won.[1]

The medical men of ancient civilizations were, usually, either priests or philosophers.[2-3] Modern medicine began when Hippocrates definitely turned from the blend of religion, philosophy and medicine which prevailed in his day, and claimed, as the special province of medical endeavor, the objective study and treatment of disease and diseased persons. Since the time of Hippocrates the greatest advances in medical knowledge have come from the study of the realities and material aspects of disease. Delving down to the metaphysics, or first principles, has not greatly enlightened the physician.

It is, therefore, of no little interest to call attention to certain lines of evidence in the field of modern science, which seem to cast light upon one of the eternal mysteries of life, and which appear to transfer an old metaphysical question to the field of biology. Where and how did Disease first originate in our universe? Can we trace Disease so far back along the paths of Time that we can form a reasonable opinion as to its starting point, and as to its place in the vast scheme of life? Can we prophesy its future?

At the beginning of our study we are confronted with an unexpected difficulty. We must find a definition of the word "disease". Strange as it may seem, no satisfactory precise definition has ever been given. Severe disease is easy to recognize, but mild diseases are separated from "health" by no sharp boundaries. In the dictionaries and pathologies it is customary to contrast "disease" with "health". "Disease" is some blemish or imperfection which impairs or mars the condition or state called "health". Some authors, like Moodie,[4] are led to lay too much stress upon infections and parasitic diseases, as if all "disease" was "infection";—obviously too restricted a view. In Aschoff's[5] "Pathologie" the following definition is given:

"We understand by the term 'disease', (Krankheit) the totality of the abnormally strong reactions of the whole body or of its parts to a disease-producing stimulus. (Reiz)."

This definition is inadequate. Not all disease shows "abnormally strong reactions". The reactions may be abnormally *weak*, or *absent*, or of *altered character*. The scope of "disease" is not fully stated. The use of the term "abnormal" in the definition implies a deviation from "normal" or "health".

It is equally difficult to give a precise definition for "health". Barker puts the matter very nicely:

"It will scarcely do to say that health is the opposite of 'sickness'. To say that it means the existence of a 'sound mind in a sound body' is better, but then we ask at once the significance of 'soundness'. I have looked far and wide for a suitable way of defining the meaning of the term 'Health' and have found nothing better than an adaptation of Grote, according to which 'Health is the capacity of an organism for adequate responses to influences in its surroundings'. We can easily change the wording to fit Herbert Spencer's definition of Life and say that 'Healthy Life is adequate adjustment of internal to external relations'. Maladjustments of all sorts would

*Read at the fifty-seventh annual meeting of the Medical Society of Virginia, in Norfolk, October 12-15, 1926, under title of "The Ancestry of Disease." The title has been changed, in view of comments, and the paper has been much elaborated.

then fall within the domain of the pathological (disease, disorder, anomaly)."

Clarke[7] has attempted to associate "disease" with "organic dependence". He goes too far. There is, probably, no creature on earth that can lead a life completely independent of other living things or of the residua left behind by dying creatures. The evidence of a carbon cycle in nature; the known interrelationships and food requirements of plants, animals and microscopic life; what is known of the "biologic balance" in nature, all testify to the dependence of each creature on the abundant life around it.

While Clarke turns his thoughts to the dependent or parasitic creature, Eccles focuses attention upon the living creatures that are attacked by parasites.[14] He gives an interesting and suggestive discussion of the immense role played by parasitism and infection in nature, and suggests that the ability to withstand parasites must have been one of the most important qualifications in survival and in the evolution of species. What he says on this subject is plausible, but he makes the error of identifying "infection" or "parasitism" with "disease," overlooking the very numerous diseases that have no parasitic or infectious element. Moreover, for a species to survive, it must be able to endure many other physical, chemical and biologic strains besides those coming from parasites.

Definitions of "disease" will vary according to the point of view of the writer. The "disease" of an individual today may be determined by comparison with his condition at a previous date. Different individuals may be compared; different ages; different races; different animal species, etc. In these instances, there will be different standards of the condition called "health", and corresponding differences in the level called "disease".

In this article "health" and "disease" will be approached from another angle. An attempt will be made to trace them both back to the beginnings of life; to correlate "health" and "disease" with "survival", "extinction", and "variation", and with changes of environment. In this way it will be attempted to secure a biologic view of "disease" as a factor in evolution. We will include in the one term "disease" what Barker subdivides into "disease, disorder, anomaly". We will include all the subject matter with which pathologic anatomy and pathologic physiology are occupied.

Since "health" is used as the standard of comparison in making a definition of "disease", it will be well to start with a working definition of "health".

"Health" depends (*i*), upon a certain degree of completeness of *body structure;* (*ii*) upon a certain degree of harmony in the interrelationships of the parts and forces which pertain to the body;—i. e., in *function;* (*iii*), upon alterations in or among the constituents and forces of the body, which shall occur within certain limited amounts and within certain rates; (*iv*), upon the harmonious adjustment of the creature to its environment at any given instant; and, (*v*), upon certain limitations in the amount and rate of changes of environment or of any particular important element of the environment. Each of the factors mentioned is continuously varying. Not only do any two individuals of the same species differ from each other, but every living creature is in a continuous state of change from the first instant of life to the end of its existence. Environment, also, is eternally changing. With many regular cycles of change, and multitudes of sporadic changes, environment presents an endlessly varying succession of patterns. The amounts and rates of change either in body or environment are widely variable. There is no single correct structure which ensures health; health is compatible with any of many structural states, provided the other factors balance. Again, there is no single value for functional capacity which is the *sine qua non* of health. One or more of the body forces may vary within moderate limits without loss of health. Indeed, cyclic variations in function are characteristic of health. Obviously, quite wide changes in environment are compatible with health; in fact, variations of environment, within limits, are essential for health, and an argument can be constructed to show that life itself is impossible in a completely static environment.

The ideas expressed in this section may be restated as a formula,—though it is to be clearly recognized that this does not imply that either "health" or "disease" or any of the factors involved can be reduced to mathematically exact terms.

If H = "health."

If B = a selected example of body struc-

ture, at any given moment;

If F = a selected example of body function, at any given moment;

If A = sum of alterations in structure and function of body within a selected time interval;

If E = environment at any given moment;

If C = totality of changes in environment, and rate of change for a selected period;

and if B, F, A, E and C are each and all variables, then their resultant or sum will be variable, and H will represent their sum, within certain limited ranges for each letter.

That is, for given structures of body between B and B′;

for given functional activity between F and F′;

for given alterations between A and A′;

for ranges of environment between E and E′;

for given changes of environment between C and C′;

$$H = B + F + A + E + C$$

From this it appears that Health is not a constant, but a condition of unstable equilibrium, maintained only when the resultant of many variables lies within certain narrow bounds.

If this equation serves no other purpose, it calls attention to the highly complicated details which blend into a unity which we call "health". Changes in one or more of the terms, beyond narrow limits, produce resultants which are not health. Life itself is impossible if any of the factors are very greatly different from "health values". In cases where one or more of the terms has such a value that the sum total amounts to something between "health", and "death", the resultant of the equation will be "disease". That is, according to the values for B, F, A, E and C, their sum will yield either "health", or "death" or "disease."

The *recognition* or diagnosis of "disease," especially milder examples, is effected, in large measure, by comparisons with standards of health.

In summary, "disease" may be defined as follows: Disease is either a process or a condition affecting either the entire person or a part or a function, characterized by lack of harmony between the part or function involved and the creature as a whole; or constituting a mal-adjustment between the diseased creature and its environment; or involving both disturbed harmony within the body and maladjustment to environment. Disease is recognized and measured by making comparisons between the structure or function being studied and standards showing optimum structure, function and environmental adjustment.

One of the best definitions of disease comes, not from a medical, but biological pen. Huxley (Century Dictionary) said, "Disease . . . is a perturbation of the normal activities of a living body." This definition is too cryptic without enlargement, but serves as a good epitome of the discussion of the preceding pages.

Section II.

In a most interesting book, "Paleopathology," Roy L. Moodie[4] has collected all the data available on the subject of prehistoric maladies. That disease is of ancient lineage has long been known. We have in the Ebers papyrus, accounts of maladies common in ancient Egypt, and through the medium of Sir Marc Armand Ruffer the mummies have revealed the antiquity of tuberculosis, tumor, and diseases of teeth, bones and joints, smallpox, prolapse, hydrocephalus, calculus, etc. Similarly there is evidence, positive, but less abundant, of the existence of diseases among the early peoples of North and South America, the diseases recognized including achondroplasia, bone and joint changes, goundou, uta, and a skin parasite.

A dimmer light guides us around the next turn down the corridors of time. There is only limited knowledge of man or his immediate forebears previous to the neolithic age. It is, therefore, surprising, in view of the relatively small number of specimens, and considering the ravages of postmortem change, that any should preserve the record of disease. Moodie gives illustrations of neolithic human remains showing tuberculous Pott's disease, vertebrae still containing flint arrowheads embedded in them, and one tibia with abundant bony growth around an arrowhead. It is estimated that these bones are about 7,000 years old. Evidences of trephinings and of amputations of fingers are also relatively abundant, and widely distributed in neolithic and paleolithic relics.

In a long journey back into even earlier geologic time we find only a few remnants of prehistoric man or of his close relatives of human aspect. Of these, a Neanderthal elbow

shows a deformity, and one other, the most ancient vestige of humanity, exhibits a definite morbid condition. The fossil, some 500,000 years old, is the thigh bone of Pithecanthropus erectus. It is marked by a protruding overgrowth of bone like the growths seen today after certain bone injuries. The diagnosis of the condition was made by Rudolf Virchow in 1895. These glimpses of the past leave no doubt that disease accompanied the human race and our predecessors as far back as the record has been carried, and that there is a strong general resemblance between the oldest diseases and those of our own day.

From the facts just reviewed we can form no opinion as to the origin of disease and must penetrate much further into the remoter recesses of the geologic past. Disease is no distinctive scourge of humanity; it afflicts all animate creatures both plant and animal with much the same harsh touch. Moodie has given detailed consideration to diseases which can be recognized by the examination of fossils. It is impossible within the limits of this paper to do justice to his monumental study, in which he has presented a review of diseased fossil plants and animals, the latter group including injuries, parasitic and infectious processes, overgrowths and tumors. Lesions of teeth, bone and joint are frequently encountered. Actinomycosis and spondylitis deformans are of great antiquity. A variety of fossil species, both plant and animal, are shown to have evidence of disease, but most of Moodie's examples are from the vertebrates, with mammals conspicuous. In general, more diseases are recognized in later geologic eras than in earlier ones. Examples of disease have been identified in fossils as ancient as the early and middle paleozoic, including injury, overgrowth, and parasitism.

The geologic record reviewed by Moodie is inconclusive as to the amount and varieties of disease. Very few individuals are perpetuated as fossils. Very few diseases could be recognized after fossilization. It is probable that many diseases will be overlooked, even if they are in the fossils, owing to our incomplete knowledge of the species and genera involved. Moreover. Moodie's conception of "disease" is too much influenced by the phenomena of infection and parasitism.

On the whole, we may conclude that disease existed at a very early period in the history of life, and that some of its contours are recognizable in the paleozoic record. The most ancient diseases can be recognized by their resemblances to diseases of the modern world. We begin to perceive that disease is one of the great primeval factors in the scheme of life, but to understand its origin we must pursue our way much nearer to the dawn of Life.

Section III.

Of the origin of Life itself we can hardly speak more precisely than did the ancients. In the ancient Grecian legend Life was the offspring of Father Time and all-nourishing Mother Earth. If we adopt the same figurative language, we may say that some scientists incline to the view that the Sun God was the father of the first life on the face of the earth. Henry Fairfield Osborn says: "Certainly we appear to inherit some, if not all, of our physico-chemical characters from the sun; and to this degree we may claim kinship with the stellar universe. Some of our distinctive characters and functions are actually properties of our ancestral star. Physically and chemically we are the offspring of our great luminary, which certainly contributes to us all our chemical elements and all the physical properties which bind them together."[8]

In the vast interval of time since Life first appeared the earth's surface has experienced a titanic succession of changes. Mountains have risen and wasted away; continents have changed their outlines like clouds in a stormy sky; warm epochs with profusion of life, have been followed by the forbidding cold of glacial eras. Osborn[8] speaks of fourteen periods of mountain-making in North America and of from twelve to seventeen continental submergings involving from half a million to four million square miles. Schuchert[9] discusses climatic changes and glacier distribution both north and south of the equator, and their profound influence in the extinction of flora and fauna. Such enormous changes brought widespread destruction to living things, and may have threatened all animate existence. Over and over Life has met the menacing gestures of nature with subtle changes in form and function, thereby placating nature's hostility, and winning instead her friendship. The motion of Life back in the dim distance of prehistoric past, can still be recognized by the geologist almost as definitely though not in as great detail, as we see the motions on the

movie screen. The changes of form are as miraculous as those in Greek legend,—in fact, more wonderful, as Life's transformations, when cornered by a threatening world, have almost always followed an orderly course.

Whatever may have been the origin of Life, and whenever it may have emerged from the steaming Past, three facts seem to stand out significantly in the geologic record: (1) From paleozoic time many million years ago, onward until our own day, Nature has been prodigal in begetting life and in destroying it; (2) Every creature or species that has appeared during the course of time has survived only so long as it found sustenance and stimulus from the contacts with the outer world, and so long as it could resist the encroachments of the unfriendly forces, animate or inanimate, which played upon it; (3) Modern science confirms the idea of the ancient Greeks that "Father Time devours his own children;" for the paleontologists find that thousands of species and genera appeared, flourished and disappeared. Schuchert[10] states that about 100,000 fossil species have been recorded and he estimates that only one out of every 2,000 forms has been preserved as a fossil, the other kinds having been completely blotted out of the geologic record.

The geologists have found it no easy matter to state with precision exactly why one species or another disappeared at certain definite geologic periods. A. R. Wallace is quoted: "To discover how the extinct species have from time to time been replaced by new ones . . . is the most difficult and at the same time the most interesting problem in the natural history of the earth."[11] Smith[12] says "The reason for this disappearance [of fauna] has always been uncertain."

The difficulties, however, are not completely baffling. In fact, biologists and geologists have a very fair conception of many of the forces and currents leading to extinction. Osborn[11] has asembled and analyzed the knowledge on this subject, and it is also summarized in discussions on evolution.

Life, for the individual as for the species and genus, has ever been a great adventure, a fight for dominion over a corner of the universe, or, perhaps, an effort towards harmonious adjustment to nature's rules. The first requisite for success in this adventure is a high degree of internal stability, or stamina,—a biologic fixity, or species-permanence. The second requisite—at first thought incompatible with stability—is mobility, adaptability, or, may we go so far as to suggest "spontaneity." These two characteristics, permanence of species type, and adaptability, are characteristics which *are inherited;* the presence, the absence, the degree and the quality of these characteristics in any living creature depend entirely upon the properties of the heredity-substance, or germplasm from which the creature arose. The forces of heredity play a most important part in survival or extinction of a species. Throughout the ages there has been the play between the heredity-energies tending to conserve permanence of the individual, or type, and those working toward the adventure of a variation.

The geologic record gives unquestionable evidence of the truth of these statements. The story of life revealed by geology is briefly this: A species will be very abundant during one geologic age. Its fossils reveal a certain degree of anatomic development and differentiation evidently sufficient to meet the requirements of that species for that age. At a much later date the species will be absent from the fossil record, and the evidence will often reveal that, at the later period, the climate had altered; a glacier had appeared; a mountain range had arisen; an ocean had swept in, or some other immense agency had produced practically a new world unsuited to the established habits of the species. The fate of the species when a profound change of environment occurred was either (1) complete extinction; or (2) the survival of offspring so different from the parent stock as to constitute a new species, with anatomic and functional development permitting survival under the new conditions in the world; or, (3) migration of the species to a new home. This, in brief outline, is the story, told over and over a thousand times in the geologic record. In fact, it is the general rule that a species cannot survive profound or prolonged changes of environment save by the begetting of offspring, modified and adapted to the new conditions. Osborn[8] says that of eighteen great orders of reptiles formerly abundant, all have disappeared except five, representatives of which are still alive. For almost every living type of today, much the same story seems to be true. Very few examples are known of genera or species which have survived with absolute stability of type, such as is shown in

the genus Lingula.[8] As stated by Fiske,[15] "The variant forms on either side [of the species type] have survived, while the constant forms have perished." Osborn, in the same spirit says,[8] "The peculiar significance of heredity-chromatin, when viewed in the long perspective of geologic time, is its stability in combination with incessant plasticity and adaptability to varying environmental conditions and new forms of bodily action." Lull[16] discusses some half dozen primitive types persisting through vast stretches of time and notes that high specialization, if unattainable, means a geologically brief career for the species.

The changes which permit of survival are changes of an heredity-type, or changes of the heredity-substance or germplasm. In a few cases, as in Waagen's studies of the fossil ammonites,[8] it was possible to trace a series of minute changes in form, in a fixed direction, moving definitely and continuously, generation after generation, ending in the production of a new species.

Osborn[11] discussed the following relations between heredity, and survival—or—extinction of species: (1) Extinction has occurred from species-inability to evolve a foot suitable for new environment; (2) Extinction has followed inability to develop teeth suitable for new foods which displaced former foods; (3) Disability due to large size has been a factor in extinction. In this connection the adaptability of the germplasm may be illustrated by referring[11] to the pigmy elephant and pigmy hippopotamus of Crete, Cyprus, etc.; (4) Extinction has resulted from high, irreversible specialization suitable in one geologic age but unsuited in the next; (5) Extinction has resulted from the slowing down of the process of heredity-variation. Osborn[8] refers to the extinctions among the reptiles. Evolution among the members of the five surviving orders has been either slow or arrested for three million years of Tertiary time. Osborn attributes this to slowing down of the exchange of heredity-material.

It is obvious that geology cannot reveal the finer detail obtainable from study of living forms, but the bold fact stands out that in geologic ages inability to adapt or to recede was at least an important factor in extinction. It is safe to go at least so far as to say that the forms dying out perished largely because they were no longer in harmony with their environment. Except for the relatively few forms which possibly were blotted out by sudden destruction, this disharmony with environment must often have presented as some pathological condition, even though it were of a nature as obscure as reduced fertility, or sterility. *Moreover, we can confidently assert that mobility and variability of the germplasm or heredity-mechanism is an attribute which is as old as life itself.*

With the idea firmly in our minds let us turn from the geologic record to life in the world today. We are apt to think that the individuals in a species are practically identical, especially when we think casually about plants and animals with which we are not thoroughly familiar. But we know that it is nearly impossible to find two human beings perfectly identical, and the more intimately other species are studied the clearer does it become that there are individual differences among the members. This is well-known in connection with selective breeding of domesticated plants and animals. Morgan has shown that there are many types of offspring produced by the fruit fly, Drosophila; some well developed, others defective, others incapable of life. He has attempted to correlate the structural peculiarities with specific points of the heredity-chromatin, or genes. In other words, the Drosophila has a germplasm which combines an axial species-fixity with an outer zone of adaptability.

Among human beings variations of an heredity type are familiar to every anatomist and embryologist. They compose a long list including both structural and functional variation. The minor variants in ears; in finger prints; in arterial distribution; in size, shape, color, power, etc., may serve as suggestions of the diversity of heredity-variants among human beings. The monstrosities are obvious examples of variants from specific type. Between the milder and extreme variants are many hereditary conditions which are examples of disease. Aschoff[5] is of the opinion that the human race is still in a state of evolution; that "there are many indications that advances in bodily development are still in progress." He also lists over fifty classes and types of disease which are to be regarded as due to errors in development and heredity. He includes[5] certain errors of growth and metabolism, some examples of diseases of the nervous system and special senses, of muscle,

bone, cartilage, skin and blood-forming organs, some errors in the secreting glands and glands of internal secretion, and some tumors.

From this list it is evident that in a species as firmly fixed as the species Homo sapiens, there is still great and constant activity in the development of variants from type, and, further, that this very process is responsible for a large number of the ills of the flesh to which man is heir. We need not in this discussion consider whether the variants are recessive or dominant, but merely point out that they occur with frequency.

If it be clearly recognized that fixity of species is consistent with wide range of mobility in the production of variants, it must be pointed out that some of these variants are successful, that is, the variant individual survives. Other variants are failures, with death and disappearance as the price exacted. In the case of minor variations from the optimum for the species, the individual may survive but be handicapped in the race of life. *These failures and handicapping variants from type constitute one of the great divisions of disease and of pathology.* This first great group of diseases includes all abnormalities of an heredity nature, malformations and many defects of function and of growth. The processes producing the diseases just referred to are *internal;* they are the processes of heredity and growth.

As the biologist learns that variation through heredity is of fundamental importance in the origin of species and extinction, the pathologist learns that a great group of diseases traces back to the same root. The successful variants survive, the unsuccessful are *per se* "abnormal," or diseased. "*Abnormality," or disease, is more than a corollary,—it is an integral part of the process of natural selection.*

Geologic evidence points with broad, sweeping gesture to the conclusion that variations around the species axis have been active from the beginnings of Life. The geologist finds that the process of variation produced at least many of the surviving species. We may reasonably conclude that the same process produced many sub-optimum forms, as it does today, and that some of these unsuccessful experiments of the germplasm survived for a time as diseased individuals.

Section IV.

In the earlier sections of this article an attempt has been made to demonstrate that variation among offspring is a constantly repeated phenomenon inherent in the heredity-schema. Some examples of disease are attributable to misadventures in the field of variation. Variation has likewise been the internal factor in living creatures which has led to the diversities among life-forms in our own time and in geologic eras. In some of the extinctions of earlier time, misadventures in the field of variation have apparently had a share. Either a species proved inept in impressing much needed variations upon the younger generations in a changing world, or else a species, which survived in one era by virtue of some highly specialized structure, found that structure an irremovable obstacle when external conditions changed in some important particular.

A consideration of *environment* in its relation to life, both ancient and recent, throws still stronger light upon that far remote "origin of disease."

Osborn[11] gives a critical discussion of the varied relations between environment and the extinction of mammalia. (a) Great changes in land levels, elevations and subsidences, have occurred over much of the earth's surface, accompanied by changes in climate, in rainfall and in seasonal variation. These changes permit, or compel a new distribution of plants and, therefore, of foods; permit the introduction of new competitors and cause or contribute to extinction of the inadaptable forms of life. After islands become separated from the mainland a profound effect is exercised by the new conditions upon the biologic balance and upon the characteristics of surviving forms. Dwarfing has occurred under these conditions. (b) Secular changes in climate profoundly alter plant life, and, therefore, foods, and competitors. The descent of a glacial age upon a warm or temperate land will wipe out many plant foods, or cover them with snow for long periods and in other ways so interfere with animal life as to cause extinction or lead to the establishment of successful variants. Under these conditions partial starvation, inadequate and unhealthy food substitutes, inbreeding and weather too severe for the young are factors which probably exert an influence. (c) Changes in the annual rainfall have an effect on vegetation and plant foods, and upon insect enemies. Heavy rainfall favors abundant and soft vegetation, suit-

able to certain jaw and tooth configuration. A drier climate favors the growth of harder grasses, which require a different jaw and tooth structure. Not only foods, but water supplies alter in distribution with changes in rainfall. With drier climates animals must travel further for water. Insect and protozoan enemies increase in wet climates and diminish in drier ones. On the other hand, I found in the dry grazing regions of Montana that the few and crowded watering places offered ideal conditions for the spread of infections.[13] Osborn gives illustrations of the extinction-value of altered rainfall, especially of prolonged droughts, such as occurred in Europe and North America in former geologic times. (d) Animal life is dependent directly or indirectly on plant life. Osborn discusses forestation and deforestation and the alterations of plant balance in their relation to extinction. With every change in an important food, the delicate biologic balance is disturbed and there arises the possibility of extinction of a species. In the same way, the arrival of a new competitor for food or of a new insect or parasitic enemy may start a species towards extinction. (e) Reduction of the numbers of a species from any cause is unfavorable in the struggle for existence. Among other disadvantages from reduced numbers is the resultant in-breeding or lessened occurrence of widely spread cross-breeding with its advantages for the production of large numbers of variants.

It must be remembered that an exact understanding of the precise way in which the causes of extinction acted is at present impossible. It is even probable that some of the many extinctions were produced by causes which are at present entirely unknown. Moreover, in using the data assembled by Osborn and Moodie, we must recognize the danger of reasoning in a circle, that is, from the present to the past; from the past back to the present. If we recognize these difficulties, we may still draw conservative conclusions. It seems safe to say that the geologic record gives unmistakable evidence that the external conditions through which Life has threaded its way have not been static, but, on the contrary, have been in a continual process of change from the dawn of time to the latest second. Moreover, changes in external, or environmental, conditions appear to have caused at least some of the extinctions, and, further, seem to have constituted the dies which stamped upon mobile species the forms which they were compelled to assume to survive. The changes developing in surviving types have been reciprocal to changes in the external world. A changing environment seems, then, to be a factor which has enveloped life from its start and seems to be an important agency in extinction and in the origin of species.

If we turn from the geologic record to our world of today, we observe that environment stands in intimate relationship to disease; of the causes of disease the environmental are usually the most obvious and the most frequent; there is literally no end to the variety of patterns which environment presents as settings for disease. Complicated, blended and interwoven though the environmental conditions usually are, as they are met with in medical practice, it is nevertheless possible and valuable to classify and tabulate them. This is usually done in works on general pathology. Aschoff[5] gives a long section to environmental causes of disease. A wide variety of disease causes is considered; food and drink, air and breathing, atmospheric pressure, dryness and moisture, sunlight, radiant energy, electric energy, heat and cold, accident, injury, poisoning and infection by bacteria or other parasites. Disease may result from too much food; from too little; from deficiency or excess in one or more of the food elements; from wrong preparation of food; from eating indigestible poisonous or infected material. Similarly, with other causes there will often be relations between disease and the quantity or dosage, the quality, the intensity, or the time during which the cause acts. Nowhere are the intricacies of this subject more perplexing than in the case of the infectious diseases, which are so widely prevalent and which command so much of our thought today.

For each living creature there is, probably, an optimum environment. Slight alteration of external conditions may often be actually beneficial, and serve as a stimulus to the living form. Slightly greater alteration in even a single particular of environment is apt to produce disease. Wide departures from the optimum environment are incompatible with life. Between the optimum and the lethal environments are many varieties of external conditions amid which the individual may drag out a sickly and reluctant existence.

As it is rare for two individuals to have identically the same vital inheritance, it is probable that there are corresponding varieties of optimum standards and of disease levels within each species. Moreover, from conception to death the individual is not biologically static, but in continual change, offering an endless succession of changing requirements in regard to optimum environment and disease.

The geologic evidence is lacking in detail, but even when allowance is made for possible errors in interpretation, we are compelled to conclude that conditions on the face of the earth have not been in static equilibrium for any long geologic period; that life is possible and always has been possible only within a rather narrow zone of world conditions; that living creatures through uncounted generations have continually been subjected to injurious or unfavorable living conditions; that adverse conditions have always been the leading causes in the vast extinctions recorded in the rocks; that a changing environment is and always has been the great sieve through which Dame Nature presses abundant life to separate those creatures whose course is run from those still fitted to survive. We evidently contemplate here one of the great primeval methods of Nature.

The biologist and pathologist have a much more detailed view of the workings of environment upon life than is possible for the geologist. In the study of living creatures it is possible to observe delicate degrees of depressed vitality which are registered as disturbances of nutrition, disturbances of growth, disturbances of function, diminished fertility, etc. There is strong reason for the opinion that the vitality of living creatures today is largely due to the success of ancestral forms in meeting and surviving the thrusts of nature. It is at the price of many extinctions that we have acquired our ability to meet changes in temperature; our ability to withstand a variety of overfeedings and underfeedings; our mechanisms for repair through inflammation; for recovery from infectious disease, and many other deeply implanted vital properties.

It is by no means improbable that vitality of any living form would be distinctly reduced in a static environment. Indeed, it is hard to conceive of life, with its processes of respiration and nutrition, continuing in a static environment. The very processes of life themselves disturb the equilibrium, continually converting stored energy into free energy.

The facts relating to environment and disease are endless and complicated, but at least it is unmistakably clear that environment supplies a constant source of causes of disease. Every unit of animate nature is exposed, at one time or another, to maladies due to unfavorable environment.

The evidence from geology and our own times leads to the conclusion that the conditions of external nature have acted on each separate living form from the beginnings of life; are acting on living things today, will continue to act as long as a living creature inhabits the earth. The powers of nature, and environment as a whole, have largely determined the extinctions of geologic times; have shaped the course of evolution, and, today, are sifting those fitted to survive under existing conditions from the unfit. Creatures living in environments distinctly below their optimum requirements are diseased. A great group of diseases are either entirely or largely of environmental causation. The relations between environment and life are of such an intimate nature that the conclusion is justified that deviations from optimum environment have recurred from the beginnings of life and that environmental diseases also had their start with the beginnings of life.

Section V.

From this survey it appears that disease is an integral part of the great scheme of life. It represents both the unsuccessful experiments of nature with variation, and also the misfits between living creatures and their environments. Most diseases belong in either one or the other of these classes, or in a group involving both sets of causes. In a world which has changed as often and as profoundly as the earth has since life appeared; in a world whose inhabitants are played upon by the myriads of stimuli in evidence today, *disease is as closely related to life and health as the hollow of the wave is to the crest. Disease is a necessary companion to health under the conditions of existence.*

If the conceptions of disease, which are here advanced, are valid, we may with reason assume that Disease is almost as ancient as Life, and that disease has figured conspicuously in moulding the genera of animals and plants now inhabiting the earth.

Moreover, there is no prospect of "disease" disappearing. Separate, individual types of disease (such as typhoid fever, malaria, mustard gas poisoning, or rickets), may be blotted out with the advance of civilization. But no species can expect to be exempted from disease so long as the germplasm furnishes non-identical offspring, and so long as each creature spins its own thread of life by means of internal forces, which may fail to harmonize with the uncontrollable, everchanging surge of events in the world of external nature.

I wish to express my thanks to several colleagues in the University of Virginia for their interest and advice in my writing of this paper. In particular am I indebted to Dr. Carroll Sparrow for many helpful suggestions, and to Dr. Ivey Lewis.

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UNUSUAL CASE OF BLOOD-CALCIUM DEFICIENCY.*

By FRANK P. SMART, M. D., Norfolk, Va.

I will not burden you with a resume of the role that calcium plays in the human economy, but will merely state that in my experience the chief conditions associated with a low blood-calcium content are delayed clotting-time of the blood and the conditions associated with allergic reactions from protein sensitization, such as hay-fever, asthma, hyperesthetic or vaso-motor rhinitis, urticaria, etc. The blood-calcium may also be low during pregnancy, in tetany, spasmophilia, tuberculosis, rickets and other bone troubles; and while it might be found to be low in individuals suffering with many other diseases, I would not be inclined to look upon this deficiency as having any etiological relation to those diseases. In other words, I would not expect the raising of the blood-calcium content to have any great curative effect on any condition not included in the groups mentioned above, but that is exactly what has happened to me, and that experience is the cause of my presenting this case for your consideration.

*Read before the eighth annual meeting of the Virginia Society of Oto-Laryngology and Ophthalmology, at Charlottesville, Va., April 30, 1927.

CASE REPORT

The patient was a well-developed and well-nourished white woman, thirty years of age. In 1918, she first consulted me, complaining of pain, photophobia and redness of both eyes. The family history and her past history were excellent except that her father contracted pulmonary tuberculosis some time before his death, which was due to other causes. The eyes showed a typical, bilateral episcleritis, which was unusually resistant to treatment. I was never able to find any focal infection to blame it on. The Wassermann was, and has consistently been negative, the tonsils and adenoids had been cleanly removed, as had the appendix; there was no reason to suspect intestinal stasis; all the teeth were vital and sound, and the Roentgenograms showed no pathology at the root apices. After a month or more, I gave her a subconjunctival injection of 1:1500 cyanide of mercury in the worst eye, and the result was so gratifying that I injected the other eye a week later, with a rapid and apparently complete cure as the result.

A month later she returned with similar symptoms in the left eye only, the condition developing into a true, deep scleritis, for which I could do little or nothing. She was repeatedly referred to the best internists available, who gave her clean bills of health except for the local eye condition. They searched for some tuberculous condition with extreme care on account of her family history, but were

unable to find anything the least suspicious. The surgeon, in making a pelvic examination, found what he called very slight tenderness in the left lower quadrant, which he thought was of no significance. Meanwhile, the sclera was beginning to give way, so, at my insistence, he consented to do a laparotomy, and removed a small tubo-ovarian cyst, which was surrounded by many fine adhesions, and which contained a large, decomposing blood-clot. This was followed by a rapid subsidence of all inflammatory symptoms, and in about two weeks the eye was symptom-free, although the scleritis left a bluish, broad-based ectatic area located in the upper temporal quadrant a few millimeters behind the ciliary region, which is fortunately too far back to produce a bad cosmetic effect, and is too far forward to materially affect her central vision. Her central vision and muscle balance were normal before the attack, but six months later she had developed two diopters of myopic astigmatism and a left hyperphoria of two prism-diopters on looking forward, and one-half a prism-diopter on looking downward.

For two years she had no ocular discomfort while wearing the indicated cylindrical and prismatic glasses. Then, in 1921, she began developing phlyctenulae of the most stubborn character, first on one cornea, then on the other. None of the generally used ointments, powders, lotions or tonics seemed to shorten their duration or materially alleviate the discomfort. Remembering her family history, and also the reputed connection between these conditions and the scrofulous diathesis, I gave her 15 doses of old tuberculin, gradually working up to a dose of 1/20 milligram, with rather questionable results. The phlyctenulae continued appearing with less severity and at greater intervals for about two years.

In December, 1923, she developed a small ulcer at the anterior tip of the left lower turbinate, and a similar one on the septum nasi at a point just opposite. These ulcers were indolent, but resisted all ointments, antiseptics and the electric cautery. They remained unchanged until I employed ultra-violet radiation locally through a quartz rod. Daily use of this agent brought about a cure in ten days.

On September 24, 1926, she developed three phlyctenules on the right cornea, which rapidly broke down into small ulcers which could be seen only after staining with fluorescein. The lower limbus became congested, and fine blood vessels could be seen in the lower cornea by using the slit lamp. The ulcers healed promptly, but the congestion at the limbus spread downward and soon developed into a violent scleritis. By blanching the superficial vessels with adrenalin, the deep lavender color of the sclera could be seen, but without such blanching it could not, as the surface reaction was so intense. The conjunctiva was raised to a height of about two millimeters, and really resembled a small boil. There was also some visual disturbance due to the appearance of floaters in the vitreous. She was given large doses of salicylate, atropine and dionin drops, and the electric thermophore was used, with no result. This continued for two weeks, when, for no particular reason except that it had not been done before, I had her blood-calcium content determined, and it was found to be 7.6. She was given calcium chloride intravenously with parathyroid hypodermically, and experienced marked relief in less than twelve hours. This was repeated daily for ten days, and after the third dose I could see a marked improvement. After the ten doses, she rested a week, and then took seven more. After a short rest, the blood-calcium was found to be 11.3, at which time she was discharged as well.

She had no further trouble until January, 1927, four months after her last treatment, when she started with her usual symptoms of burning and episcleral congestion while away on a trip. It got so bad after a few days that she cut her trip short and came back, at which time she had a blood-calcium of only 9. She was given twenty grains of calcium lactate three times a day, and took daily exposures to ultra-violet rays, using the Alpine lamp all over the body. The result was just as happy as the former one, all symptoms disappearing in a day or two with a rise of her blood calcium to 10.

She has had one other slight relapse, in the latter part of February, associated with a calcium index of 9, which was treated as above, with the same result.

Since this last flare-up she has been on a diet rich in calcium, and has taken Alpine light radiations once or twice a week, just enough to keep her well tanned, and has had no further trouble. She has been advised to continue her diet, and spend as much time as possible this summer at the beach in her bathing suit.

Remarks

I would like very much to be able to report a series of scleritis cases, but this is the only one that I have seen in recent years.

I do not claim any credit for the happy termination of this case (if indeed, it be a termination) because it was not the result of reason, but merely a fortuitous circumstance that I stumbled on the right remedy in blundering around, grasping at straws.

I do not claim that calcium deficiency is always the cause of scleritis, or even that it was the cause in the case reported. I merely claim that, in this case, the patient had three attacks that started alike in the same place, that the blood calcium was low in each instance, and that the condition got well promptly as soon as the blood calcium was brought up.

My plea to you gentlemen is two-fold:

First:—Scleritis is a disease fraught with such dire possible consequences to the eye, and the etiology and treatment are so uncertain and unsatisfactory at present, that I beg you to study the blood-chemistry of all such cases that come under your care. Probably no one of us sees a sufficient number of such cases to arrive at anything definite, but, if we all keep it in mind, we may be able to prove whether or not all cases of scleritis have calcium deficiency, and whether or not the administration of calcium may be relied on.

Second:—So far as I know, no one has ever hinted that there may be a connection between scleritis and calcium deficiency. This case seems to indicate that there might be. Might it not play a part in the etiology of other poorly understood diseases? My suggestion is that, whenever you have blood chemistry done for any other reason, you include a determination of its calcium content.

810 *Medical Arts Building.*

A METHOD OF CONTROLLING SKIN IRRITATION FOLLOWING COLOSTOMY.

By WILLIAM B. MARBURY, M. D., Washington, D. C.

The principal reason for bringing the two cases that I have to your attention is to show a simple device for controlling some of the annoying effects to the patient, of a colostomy. In both cases, an opening was made in the caecum to relieve an obstruction in the sigmoid, which, for reasons to be shown later, could not be directly attached. Both patients were operated on about three years ago for supposedly carcinoma of the sigmoid. One died a year later with more or less general carcinomatosis and the other is still living. In neither one was an exploration done. Both were done under local anaesthesia.

The device used to prevent constant soiling and irritation of the skin in the region of the wound was to fit a soft rubber tube, about three inches long and one-half inch wide, into the

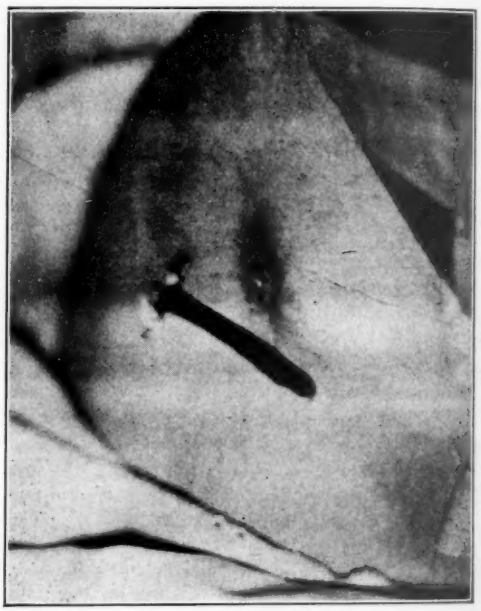

Figure 1.—Fistulous opening into the caecum through a McBurney incision. The tube shown lying on the abdomen.

opening in the gut and clamp the projecting end with a screw-clamp. Vaseline gauze was placed immediately around the tube and the clamp rested on this. A small dressing of gauze was placed over the area and held with adhesive. One patient further modified this arrangement, apparently much to his satisfaction, by placing a safety pin through the end of the tube and closing the lumen by inserting a tip of gauze. I saw him quite recently and he told me that he had no inconveniences from his artificial anus. Twice a week, a visiting nurse irrigates the colon through the tube and except on these occasions, he does not have to change the dressing. Nothing passes by the usual route.

It is interesting to note that, following the caecostomy, more fecal matter passed by the natural route than before. This is probably due to the fact that the bowel content is more

fluid because of irrigation from above and less congestion in the region of the stricture. The tube only works satisfactorily when the gut has been sutured to the peritoneum and not brought to the surface. In the latter case, there is an eversion of the mucous membrane, especially during peristalsis, which prevents it from fitting snugly.

Smith and Christensen have reported a method of preventing skin excoriation, which seems worthy of mention. They experimented with different substances to neutralize digestive action of enzymes poured out in the bowel secretions, and found that kaolin was probably the best. They mixed kaolin and glycerine to make a thin paste and spread it around the fistula. Powdered kaolin is then dusted on and a dressing is applied. Complete relief is given for from five to twelve hours when the application is renewed.

Figure 2.—Tube inserted and held in place by a safety pin.

Case 1.—Mrs. W. B., seen first on June 21, 1924, complaining of pain in the abdomen and constipation. Her general health had always been good until a year before this when she had trouble with her heart—myocarditis with fibrillation. For three months she had had pain at times, often severe, in the right side of the abdomen, and marked constipation. Her bowels only moved with the aid of drastic cathartics, and were quite fluid—no formed stools. On the 20th, she vomited several times, but that evening she had the best bowel movement in ten days. This was probably the result of castor oil taken on the 18th. She passed some blood from the rectum but, since she had hemorrhoids, it was difficult to be sure of the source. Physical examination showed woman, seventy-seven years old, rather well preserved. Head and neck negative. Crepitant rales could be heard at the bases of both lungs. Heart enlarged, but no murmurs. Constant fibrillation. Heart beats 120-130, with only half this number transmitted to the wrist. Some swelling of the ankles. Systolic blood pressure 180. The abdomen was considerably distended and a fixed mass could be felt in the lower left quadrant. This was about the size of an egg but difficult to outline. Rectal examination revealed nothing of importance. Dr. Kerr saw the patient in consultation and concurred in the diagnosis of carcinoma of the sigmoid.

She was removed to Emergency Hospital and under local anaesthesia a McBurney incision was made and the caecum brought into the wound and sutured with f. b. s. to the peritoneum. A purse string suture was placed in the part of the gut presenting but left loose. Two guide sutures were placed opposite to each other for traction and identification. The wound was partially closed. On the following day a small opening was made into the bowel and a No. 20 catheter inserted. The purse string was pulled taut. She had a stormy convalescence because of her heart and was in the hospital for three weeks. She lived just about a year, but, in the interim, she was comparatively comfortable, and was able to get about and take an occasional walk or drive. She wass irrigated through the tube every second day. There was no soiling and no irritation of the skin.

Case 2.—Mr. F. A., male, 65 years old. Seen February 27, 1924, complaining of cramps in his abdomen—with constipation. His general health had been good until two weeks before. He had taken all kinds of cathartics without much result. An X-ray, taken by Dr. Merritt, showed as follows: "Examination of the chest shows increased width of the thoracic aorta to the point of establishization of aneurysm. The stomach is normal, as is the duodenal cap. No shadow of gall-stone. The colon shows enormous quantities of gas trapped throughout, with spaces in the terminal third. The patient could not retain an enema in the slightest

amount. This is doubtless due to some obstruction, probably in the recto-sigmoidal apparatus." There was no difference in the pulse at the wrist and no bruit could be heard. The blood pressure was 212 systolic. The urine showed a faint trace of albumen and a few hyaline and granular casts. The abdomen was markedly enlarged and a definite pattern of distended coils of intestines could be seen. There had been no vomiting. No blood or mucus from the rectum. Rectal examination negative.

A colostomy was done on February 29, 1924, following the same technic as in the previous case.

It is worthy of note that in a buried bowel

Figure 3.—Much smaller piece of gauze may be used to protect the skin.

such as this, i. e., when the bowel is sutured to the peritoneum and not brought to the surface, it is important to pack off with vaseline gauze so as to prevent the muscles from crowding in and obscuring the purse string suture. If this precaution is taken, an opening can be made in the gut later, generally the following day, with very little retraction and, consequently, very little discomfort.

I have not had an occasion to use the tube in a left-sided colostomy, but see no reason why it should not work as well.

1015 *Sixteenth Street.*

THE RESULTS IN THE TREATMENT OF PULMONARY TUBERCULOSIS BY ARTIFICIAL PNEUMOTHORAX IN SEVENTY-SIX CASES.*

By W. L. DUNN, M. D.,
and
FRANK B. STAFFORD, M. D.,
Sanatorium, Va.

The purpose of this report is to tabulate the results obtained in seventy-six cases of pulmonary tuberculosis treated by artificial pneumothorax. These patients received treatment in this sanatorium for varying periods of time during the six years that this institution has existed. It is not within the scope of this article to consider the relative merits and demerits of artificial pneumothorox in the treatment of pulmonary tuberculosis, nor is it the intention of the authors to discuss at any length the indications for this procedure. Our chief interest in this paper lies in the results obtained and not in a discussion of principles. However, to accomplish this end it will be necessary briefly to mention the indications for this treatment as they have existed here, with a few cursory remarks on the dangers of this operation.

The indications for artificial pneumothorax as it has been employed here have been four in number:

1. *Progressive Disease.*—Under this heading are grouped those cases which mostly showed extensive involvement and failed to improve with rest, proper diet and routine sanatorium treatment, those exhibiting an extension of the process, and those in whom complications, such as tuberculosis of the larynx, were arising. In a few cases it has been tried as a sort of forlorn hope, cases in which the possibility of success was small,—where there was everything to gain and nothing to lose.

2. *Uncontrollable Hemorrhage.*—Cases in which the usual medicinal measures have failed and the patient is steadily growing weaker from loss of blood. The difficulties encountered are inability to determine which lung the hemorrhage is coming from, and inability to compress the lung because of extensive adhesions. Usually the patient is conscious of some discomfort—either actual pain or soreness—on the affected side, and frequently large bubbling rales can be heard on that side during inspiration if examination is made soon after blood-spitting began.

Routine X-ray films (stereoscopic) and sub-

*Treated at the Blue Ridge Sanatorium, Charlottesville, Va.

sequent physical examinations are available for study should an emergency arise and necessitate the making of a quick decision as to whether artificial pneumothorax is a justifiable procedure.

3. *Spontaneous Pneumothorax.* — Usually the patient has a rather extensive pathological process in the lung which has collapsed spontaneously, consequently continued compression is advantageous to the patient. Of course, the degree of collapse maintained is governed by the condition of the lung on the opposite side.

4. *Pleurisy with Effusion.* — The fluid withdrawn is replaced by an approximately equal volume of air. If pneumothorax is not continued by artificial means, the inflamed parietal and visceral layers of pleura will become adherent and cause the patient considerable pain and discomfort. Often there is parenchymatous disease present which continued compression helps.

The complications which may arise during the course of such treatment are numerous, the more important of which are:

1. Infection of the contralateral lung.
2. Empyema—either from improper technique, infection from puncturing the lung, or the breaking of an adhesion with a tearing of the visceral pleura.
3. Embarrassment of the circulation by displacement of the mediastinum, either suddenly by too large a filling, or gradually by increasing the intrapleural pressure beyond the point of safety.
4. Pleural effusion—a fairly frequent complication.
5. Puncture of the lung with consequent spontaneous pneumothorax.
6. Pleural shock,—a very rare condition.
7. Air emboli,—also rare.

Of these complications, infection of the contralateral lung (3 cases), empyema (1 case), pleural effusion (11 cases) and embarrassment of the circulation by increasing the intrapleural pressure too rapidly (several cases), have been experienced in this series of cases.

Quite recently, one case, which developed a caseous bronchopneumonia, was started on artificial pneumothorax, and in less than a month she had a large area of consolidation in the hilum region of the opposite side where previously there had been no involvement. Two similar cases convince us that such a possibility should not be considered too lightly, for it occurs more frequently than is usually thought. It is usually regarded as being the result of aspiration of infected material from the compressed lung, and seems to occur in much the same manner as aspiration following hemorrhage.

One case developed empyema, from what cause could not be determined. Following the institution of surgical drainage the patient has improved considerably.

The danger of rapidly collapsing the lung and thus embarrassing the circulation through mediastinal pressure displacement is an ever-present one and must be constantly borne in mind. In the average case the best results are obtained by injecting a small amount of air (average 200—300 c.c.) each time, with a short interval between refills. In this institution all pneumothorax cases are examined fluoroscopically about once every six weeks or two months, and, if necessary, X-ray plates are made at that time. This gives serial plates for study and comparison. Such an examination enables the physician to determine the degree of collapse as well as the relative position of the mediastinum and its structures, and if taken in conjunction with the bedside notes on the patient, too rapid an increase in the intrapleural pressure can be avoided.

It is by no means possible to collapse a lung in every case because of the existence of adhesions. Table I presents the successes and failures in attempts to compress a diseased lung. Of the seventy-six cases in this series,

TABLE I
PER CENT OF CASES IN WHICH LUNG COULD NOT BE COLLAPSED BY ARTIFICIAL PNEUMOTHORAX

No. Of Cases	Results			
	Satisfactory Collapse		Failure To Collapse Lung	
	Number	Per Cent	Number	Per Cent
76	66	86.82	10	13.18

a satisfactory collapse was secured in sixty-six, or 86.82 per cent. In the remaining ten cases, or 13.18 per cent, failure was attributable to extensive adhesions which bound the lung to the chest wall.

Table II-A comprises a list of forty-five patients in whom collapse of the diseased lung by artificial pneumothorax was accomplished and who are no longer patients in this sanatorium. First, the indication for pneumothorax is given together with the number of cases receiving it; next, the risk, whether good, fair, poor, or very poor; lung involvement, whether right or left; the average age of the patients in each group; the age limits in each group; and, most important, the results, whether the patient is immediately improved or unimproved, as well as the ultimate outcome of the treatment.

The classification of patients, according to what sort of risk each case was, is purely arbitrary and is based solely on the extent of the involvement in the contralateral lung. A case with unilateral pulmonary tuberculosis is a "good risk;" one with a minimal amount of disease (above the second rib) in the opposite lung may be considered a "fair risk;" while one with moderate involvement (disease above the fourth rib to apex) in the opposite lung becomes a "poor risk;" and one having the entire contralateral lung diseased is a "very poor risk."

Under the heading "results", immediate improvement indicates a lessening of symptoms, such as cough, expectoration, lowering of temperature, improved appetite and a gain in weight. The patient feels better and to all appearances is improving. Ultimate improvement signifies an amelioration of symptoms and an improvement in the pulmonary condition. It must be remembered that according to the diagnostic standards of the National Tuberculosis Association, no patient who has artificial pneumothorax can be discharged from a sanatorium as better than "improved."

Table II-A includes forty-five cases, twenty-six of whom received artificial pneumothorax because of progressive disease, thirteen for the control of hemorrhage, five cases of spontaneous pneumothorax and one case of pleurisy with effusion.

Of the twenty-six cases of progressive disease, four were good risks, three of whom were immediately improved and one unimproved, while all four were ultimately improved. Of six fair risks, four were both immediately and

TABLE II-A.
PATIENTS DISCHARGED FROM THE SANATORIUM

INDICATION	NO. CASES	RISK	LUNG		AVE. AGE	AGE LIMITS	RESULTS			
							IMMEDIATE		ULTIMATE	
			L	R			IMPROVED	UNIMPROVED	IMPROVED	UNIMPROVED
Progressive Disease	26	Good	1	3 (4)	25	15–51	3	1	4	
		Fair	5	1 (6)			4	2	4	2
		Poor	5	5 (10)			8	2	7	3
		Very Poor	4	2 (6)			2	4	2	4
							17	9	17	9
Hemorrhage	13	Good	2	(2)	29	16–45	2		2	
		Fair	1	(1)			1		1	
		Poor	5	2 (7)			7		6	1
		Very Poor	1	2 (3)			3			3
							13		9	4*
Spontaneous Pneumothorax	5	Poor		2 (2)	31	21–37	2		2	
		Very Poor	2	1 (3)			2	1	2	1
							4	1	4	1
Pleurisy with Effusion	1	Good		1	57	57	1		1	
							1		1	

*In three cases not listed adhesions prevented collapse of the lung, but hemorrhage stopped immediately.

ultimately improved, and two showed no benefit at all. Of the ten poor risks eight were immediately improved and two unimproved, while seven left the sanatorium as improved and three as unimproved. Of the six very poor risks, two were both immediately and finally improved and four showed no response whatever.

In thirteen hemorrhage cases, two were good risks, and both improved immediately and continued to progress as did the one fair risk. All seven poor risks were immediately improved, of which six were permanently benefited and one was not. Three very poor risks showed immediate improvement in that their hemorrhage was controlled and symptomatically they were better, but ultimately the treatment did no good.

Of five cases of spontaneous pneumothorax, two were poor risks which improved both immediately and ultimately, as did two of the three very poor risks. One very poor risk did not show improvement.

The only case of pleurisy with effusion, which was a good risk, improved steadily from the beginning of treatment, and has now resumed his professorial duties in college.

Table II-B is a summary of the twenty-one cases now receiving pneumothorax treatment at this sanatorium, seventeen on account of progressive disease and four because of hemorrhage. Of the seventeen so treated for progressive disease, seven were fair risks, of which number six were both immediately and ultimately benefited, one showed no immediate effect, and at present treatment has not been continued long enough for the ultimate result to be determined. Four of the five poor risks were improved immediately and ultimately, while one has showed no immediate improvement and the ultimate result is doubtful. Of five very poor risks, four were immediately improved and one unimproved. Ultimately, one was benefited and three were not.

Of the four cases given artificial pneumothorax for the control of hemorrhage, two were fair risks, and two were very poor risks, but all four were both immediately and ultimately improved.

Table III-A gives a summary of the essential points in Tables II-A and B. Of forty-three cases having progressive disease as their indication, thirty-one (72.1 per cent) were immediately improved, with twelve (27.9 per cent) showing no change; twenty-eight (65.12 per cent) were ultimately helped and twelve (34.88 per cent) were not (three cases have not received treatment long enough for the ultimate result to be determined). Of the seventeen hemorrhage cases, all seventeen (100 per cent) had their hemoptysis controlled, while thirteen (76.5 per cent) were ultimately improved. In five cases of spontaneous pneumothorax, four (80 per cent) were both immediately and ultimately improved, while one (20 per cent) showed no effect. The only case of pleurisy with effusion was immediately and ultimately improved.

Of the sixty-six cases in which the lung was successfully collapsed, fifty-three (80.3 per cent) were imemdiately improved and forty-six (73 per cent) were ultimately benefited.

TABLE II-B.
PATIENTS NOW RECEIVING PNEUMOTHORAX TREATMENT

INDICATION	No. CASES	RISK	LUNG		AVE. AGE	AGE LIMITS	RESULTS			
			L	R			IMMEDIATE		ULTIMATE	
							IMPROVED	UNIMPROVED	IMPROVED	UNIMPROVED
Progressive Disease	17	Fair	5	2 (7)	28.9	9–50	6	1	6**	
		Poor	3	2 (5)			4	1	4**	
		Very Poor	2	3 (5)			4	1	1**	3
							14	3	11	3
								2		
Hemorrhage	4	Fair	1	1 (2)	18	14–22	2			
		Very Poor	2				2		2	
							4		4	

**Three patients, one fair risk, one poor risk, and one very poor risk, have not been treated long enough for the ultimate result to be evident.

TABLE III-A.
SUMMARY

INDICATION	No. CASES	RISK	LUNG		AVE. AGE	AGE LIMITS	RESULTS							
							IMMEDIATE				ULTIMATE			
							IMPROVED		UNIMPROVED		IMPROVED		UNIMPROVED	
			L	R			No.	%	No.	%	No.	%	No.	%
Progressive Disease	43	4 13 15 11	25	18	26.5	9–51	31	72.1	12	27.9	28	65.12	12	34.88*
Hemorrhage	17	2 3 7 5	12	5	26.4	14–45	17	100.			13	76.5	4	23.5**
Spontaneous Pneumothorax	5	2 3	2	3	31	21–37	4	80.	1	20.	4	80.	1	20.
Pleurisy with Effusion	1	1		1	57	57	1				1			
	66	7 16 24 19	39	27	27.3	9–57	53	80.3	13	19.7	46	73.1	17	26.9

*One patient classified as a fair risk and two considered as poor risks have not been taking pneumothorax treatment long enough for the ultimate result to be determined.

**One former patient and two now in the sanatorium at present hemorrhaged and an attempt was made to collapse the affected lung, but was unsuccessful because of numerous adhesions; however, all three patients were free from further hemoptysis at that time, whether as a result of the few hundred c.c. of air injectd into the pleural sac or from something else, cannot be determined. They have been omitted from the list above.

These figures for the ultimate result do not take into account three cases which have received treatment long enough to determine the final result. In thirty-nine the left lung was collapsed, and in twenty-seven the right lung was compressed.

Table III-B classifies the results according to the type of risk each patient was. Of the sixty-six cases in this series, seven were good risks; of this latter number, six (85.7 per cent) were immediately improved, and all seven (100 per cent) were discharged as improved. Of the sixteen fair risks, thirteen (81.3 per cent) were immediately improved and 3 (18.7 per cent) unimproved, while thirteen (86.67 per cent) were ultimately improved and two (13.33 per cent) were unimproved (ultimate result doubtful in one case). Twenty-four were poor risks, of whom twenty-one (87.5 per cent) were immediately helped and three (12.5 per cent) were not; nineteen (82.6 per cent) were ultimately improved and four (27.4 per cent) continued to grow worse (ultimate result doubtful in one case). In nineteen cases classified as very poor risks, thirteen (68.42 per cent) were immediately benefited, while six (31.58 per cent) were not. Seven (38.88 per cent) were ultimately improved and eleven

TABLE III-B.
RESULTS ACCORDING TO THE TYPE OF RISK

RISK	No. CASES	RESULTS							
		IMMEDIATE				ULTIMATE			
		IMPROVED		UNIMPROVED		IMPROVED		UNIMPROVED	
		No.	%	No.	%	No.	%	No.	%
Good	7	6	87.5	1	14.3	7	100		
Fair	16	13	81.3	3	18.7	13	86.67	2	13.33*
Poor	24	21	87.5	3	12.7	19	82.6	4	27.4*
Very Poor	19	13	68.42	6	31.58	7	38.88	11	61.12*
	66	53	80.3	13	19.7	46	73.1	17	26.9

*One patient has not been receiving pneumothorax treatment long enough for the ultimate result to be determined.

(61.12 per cent) were ultimately unimproved (ultimate result doubtful in one case).

Table IV shows the number and per cent of patients receiving artificial pneumothorax who at some time during the course of treatment gave evidence, either on X-ray or physical examination, of fluid in the pleural cavity. Of fifty-seven cases, twenty-seven (47.36 per cent) showed fluid at some time. Of this number, thirteen (22.8 per cent) required aspiration. Of the twenty-seven cases presenting fluid, fourteen (24.56 per cent) had such small amounts that its presence was noted in routine physical or fluoroscopic examinations, but aspiration was never considered necessary.

The second part of the table excludes the two cases of spontaneous pneumothorax mentioned in the first part, and deals with cases of artificial pneumothorax only. Of the fifty-five cases, twenty-five (45.45 per cent) had fluid; eleven cases (20 per cent) required aspiration, while fourteen (25.45 per cent) showed very small amounts.

Table V indicates the amount of weight gained by the patients who improved. Of thirty-one cases now discharged from this sanatorium, twenty-three (74.2 per cent) gained from two to forty lbs., an average gain of fifteen lbs.; two neither gained nor lost, and four lost weight. Of the nineteen patients now receiving this treatment, eleven (58 per cent) gained from 3.5 to 45 lbs., an average gain of 16.05 lbs.

TABLE IV.
PLEURAL EFFUSION AS A COMPLICATION OF ARTIFICIAL PNEUMOTHORAX

NUMBER OF CASES	SHOWING FLUID		ASPIRATED		SPONTANEOUS PNEUMOTHORAX		AMOUNT OF FLUID TOO SMALL FOR ASPIRATION	
	No.	%	No.	%	No.	%	No.	%
57	27	47.36	13	22.8	2	100	14	24.56
Excluding cases with spontaneous pneumothorax.								
55	25	45.45	11	20.			14	25.45

NOTE: Four cases not included in the figures given above were admitted with spontaneous hydro-pneumothorax and had to be aspirated, as did one case, also not included in these figures, admitted and diagnosed as having pleurisy with effusion.

Table VI gives the average temperature curve of thirty-nine patients who were immediately improved by artificial pneumothorax. The average temperature for one week previous to the institution of this treatment was

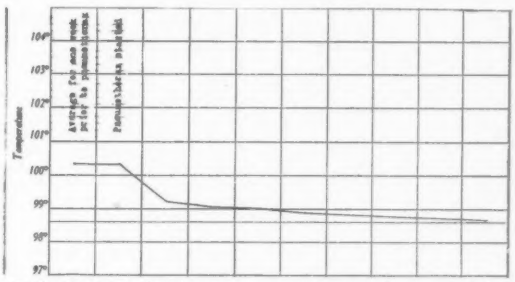

Table No. VI, showing average temperature curve of thirty-nine patients before and after pneumothorax was started.

100.4 F.; after one week of artificial pneumothorax, 99.3; after two weeks, 99.1; after three

TABLE V.
WEIGHT TABLE
A. PATIENTS DISCHARGED AS ULTIMATELY IMPROVED

NUMBER CASES	NUMBER GAINING	NUMBER STATIONARY	NUMBER LOSING	LEAST GAIN–LBS.	GREATEST GAIN–LBS.	PER CENT GAINING	AVERAGE GAIN–LBS.
31	23	2	4	2	40	74.2	15.0
B. PNEUMOTHORAX PATIENTS NOW IN THE SANATORIUM							
19	11	0	4	3.5	45	58	16.05
50	34	2	8	2	45	68	15.34

weeks, 99; after one month, 98.9; and after two months, 98.7.

Conclusions

1. The indications for artificial pneumothorax as they have existed in this sanatorium are chiefly progressive disease, hemorrhage, spontaneous pneumothorax and pleurisy with effusion.

2. The dangers of this procedure are—spread of the infection to or in the contralateral lung, empyema, embarrassment of the circulation through displacement of the mediastinal structures, pleural effusion, puncture of the lung with subsequent spontaneous pneumothorax, pleural shock, and air emboli. Of these, the first four have been encountered here.

3. Of the seventy-six cases in this series, satisfactory collapse was secured in sixty-six (86.82 per cent). In the other ten cases adhesions were principally responsible for failure.

4. In forty-three cases of progressive disease, thirty-one (72.1 per cent)were immediately improved, and twenty-eight (65.12 per cent) were ultimately improved; of seventeen hemorrhage cases, seventeen (100 per cent) stopped hemorrhaging immediately, and of these thirteen (76.5 per cent) were finally improved; in five cases of spontaneous pneumothorax, four (80 per cent) were both immediately and ultimately improved; one case of pleurisy with effusion was both immediately and ultimately benefited.

5. The results of artificial pneumothorax treatment in pulmonary tuberculosis seem to depend in a large measure upon the condition of the contralateral lung. Of seven good risks, six (85.7 per cent) were immediately improved, and all seven (100 per cent) were ultimately improved; of sixteen fair risks, thirteen (81.3 per cent) were immediately improved and thirteen (86.67 per cent) were ultimately improved (one case has not been receiving treatment long enough for the ultimate result to be determined); of twenty-four poor risks, twenty-one (87.5 per cent) were immediately improved and nineteen (82.6 per cent) were ultimately benefited (one case has not been receiving treatment long enough for the ultimate result to be determined); of nineteen very poor risks, thirteen (68.42 per cent) were immediately helped, and seven (38.88 per cent) were ultimately improved by this treatment.

6. Of fifty-seven cases, twenty-seven (47.36 per cent) showed fluid in the pleural cavity. In thirteen (22.8 per cent) of these aspiration was necessary; in fourteen cases (24.56 per cent) the amount was too small for aspiration to be considered. Excluding two cases of spontaneous pneumothorax, eleven (20 per cent) of the remaining fifty-five required aspiration; fourteen (25.45 per cent) had fluid in amounts too small to produce symptoms or discomfort, and did not necessitate its removal.

7. Of fifty patients who were improved by artificial pneumothorax, thirty-four (68 per cent) gained in weight. The number of pounds gained ranged between 2 and 45; the average gain was 15.34 pounds.

8. In thirty-nine cases the average temperature for a week prior to the beginning of pneumothorax treatment was 100.4 F.; one week after it had dropped to 99.3; two weeks, 99.1; three weeks, 99; one month, 98.9; and two months, 98.7.

9. Finally it must be concluded that pneumothorax is a valuable asset in the treatment of pulmonary tuberculosis, that the results depend principally on the selection of the cases and that it should be used more when indicated.

HEMORRHOIDS—INJECTION OR OPERATION.*

By WILLIAM W. RIXEY, M. D., Richmond, Va.

Injection

The origin of this method is obscure but it assuredly originated in America and was for many years practiced by quacks who were known as "pile curers". In spite of the complications and occasional disasters occurring in their unskilful practice, the method has survived—a tribute to its efficacy,—and today there is no doubt that its popularity is increasing among rectal surgeons and other students of the subject. I venture to state that the contempt held for this method of treatment by many practitioners would be changed to an attitude of high regard should they have the opportunity to observe a series of skilfully treated cases. Investigation through studies of rectal anatomy, pathology, and tissue changes subsequent to injection, has

*Read by invitation before the Warren, Rappahannock and Page Medical Society, in Front Royal, Va., April 19, 1927.

rescued the method from the field of quackery, eliminated the hazards to the patient, and placed the treatment on a truly curative and scientific basis.

Hemorrhoids are usually divided into three groups—internal, interno-external, and external. It is in that rather large class of uncomplicated internal hemorrhoids which either do not protrude or which protrude and can be replaced easily that the efficacy of the injection treatment is best demonstrated. I would like to accentuate the fact that hemorrhage from this type of hemorrhoids is quickly and permanently relieved by injection, and if bleeding is present when the treatment is begun, its source should be determined and the responsible hemorrhoid or hemorrhoids injected during the patient's first visit.

Concerning the next class, interno-external hemorrhoids, disagreement exists. In recent articles by two eminent proctologists, both of whom are advocates of the injection treatment, one unqualifiedly asserts that he uses the injection method and the other states that he invariably advises operation. It seems to me that a correct analysis of the structure of the hemorrhoid is the deciding factor in determining whether or not this type is suitable for injection. If the varicosities are abundant in the external portion of this combined type, it is my opinion that injection should never be used. On the other hand, when the varicosities are largely confined to the internal portion, the external portion consisting chiefly of interstitital hypertrophy and edema, this method may be used with satisfactory results.

External hemorrhoids are not suitable for the injection treatment.

For the injection I use a 5 per cent solution of quinine and urea hydrochloride. The position of the patient is of no consequence so long as a good view of the anal canal is obtained. Enough of the solution, from a few drops to one c.c., is used to moderately distend the tumor. A mild degree of blanching ensues. Three or four tumors, unless extremely large, may be safely injected at one sitting. Four to seven treatments are usually necessary and the interval between should be four to seven days. Symptomatic relief, especially with bleeding hemorrhoids, may follow the first injection, but insufficient treatment invites recurrence. The injection causes little or no pain, is more economical than operation, and is strictly an ambulatory treatment. With a careful technique and attention to detail, a proper placing of the injection and the use of a correct quantity of the solution, complications will not occur.

The cure of internal hemorrhoids by the injection of a strong solution of quinine and urea hydrocloride is brought about in the following manner: A few minutes following the injection, a fibrinous exudate forms within the interstitial tissue. This exudate maintains extravascular pressure and is, in time, partially replaced by fibrous tissue which, like all scar tissue, tends to contract.

The fibrous tissue connects the mucosa and submucosa with the muscular coat, prevents prolapse, slowly obliterates the dilated veins and causes a gradual shrinkage of the hemorrhoid.

Operation

Since the purpose of this paper is to deal with curative measures, palliative treatment, though valuable in acute conditions and when more radical methods are refused, will not be discussed. Operation is indicated and injection contra-indicated in all cases where marked infection and inflammation have occurred. The presence of fistulas, fissures, polyps and other surgical conditions of the ano-rectal region would naturally lead one to advise excision of the hemorrhoids, combined with the surgical treatment of the accompanying pathology. A certain type of interno-external hemorrhoids and all external hemorrhoids complete the list in which operation is indicated.

General anesthesia is rarely necessary in rectal surgery. Hemorrhoidectomies may be performed under infiltration with novocaine, but sacral anesthesia is the method of choice. This extra-dural nerve block has the advantage of safety for the patient, the operative field is not distorted, sufficient relaxation of the external sphincter muscles obtains, and sensation returns more slowly, thus minimizing post-operative pain.

As for the method of removal, I prefer the ligature with excision operation. With this procedure a proper hemostasis and proper removal of pathological tissue is best accomplished. A most important, yet most neglected, part of hemorrhoidal surgery is the post-operative care.

Surgical cleanliness should be maintained by frequent dressings and irrigations, and by these

same means post-operative infection and edema will be eliminated. Severe pain rarely follows a correctly performed hemorrhoidectomy and, when present, may be greatly minimized by the use of surgical cleanliness, local heat, and anesthetic ointments.

The injection treatment encroaches upon the field of hemorrhoidal surgery, for the average patient will not accept operation and hospitalization when they can be safely avoided. On the other hand, a modern hemorrhoidectomy under local anesthesia, with careful post-operative attention, can no longer be classed with the painful experiences of a few years ago.

Professional Building.

DIAGNOSTIC AND PROGNOSTIC CRITERIA IN PULMONARY TUBERCULOSIS.

By W. D. TEWKSBURY, M. D., Washington, D. C.

This subject has been so frequently and thoroughly discussed before medical bodies during the past twenty or thirty years that I approached the task of presenting a short paper on the subject this evening with some hesitancy and reluctance. I have made an effort, however, to confine my remarks to a few practical and useful points concerning diagnosis and prognosis, and to bring out, as much as may be possible, impressions based on personal experience.

Accurate diagnosis of pulmonary disease requires two things: first, some experience and skill on the part of the examiner, and, second, all facilities, such as X-ray apparatus, laboratory, etc., for making the necessary examinations and tests. In the latter respect the general man is, of course, handicapped, and it is perfectly natural that a certain percentage of cases of clinical tuberculosis will escape diagnosis for a time. When we say diagnosis, what do we mean? I think the classification used at Trudeau Sanatorium, Saranac Lake, is the most sensible. They classify their cases as non-tuberculous, suspected tuberculosis, and tuberculosis—non-clinical or clincal.

Suspected Tuberculosis

No rales are noted in upper chest; no X-ray findings except peri-truncal lesions; no tubercle bacilli present. Patient may or may not react to tuberculin tests. There is a history of either a previous lung hemoptysis or a previous pleurisy with effusions, but not both. This last is most important. Any case with a history of either pulmonary hemorrhage or pleurisy with effusions should be considered as suspected tuberculosis.

Pulmonary Tuberculosis—Non-Clinical

No rales in upper half of chest.

Presence of parenchymatous X-ray lesions not explainable by other causes.

Tubercle bacilli negative.

Patient may or may not react to tuberculin tests.

Symptoms must be absent.

Pulmonary Tuberculosis—Clinical

Any one or more of the following:

Persistent rales in upper chest not explainable by other causes.

Parenchymatous X-ray lesions.

Tubercle bacilli in sputum.

Focal reaction in lung showing in X-ray after subcutaneous tuberculin injection.

A history of an unexplained hemoptysis of more than a teaspoonful of blood together with history of pleurisy with effusion.

There is a certain type of clinical tuberculosis where the patient has old fibrosis in the lungs which may be quite dense and extensive and yet show very few signs on physical examination by the most skilful examiner. The dullness on percussion is masked by compensatory emphysema, and there is absence of rales and of definite breath sound changes. However, the moment this case is looked at with fluoroscope or X-ray films are taken, the lung lesions stand out most distinctly. I frankly admit that I am at times surprised and astonished at the amount of involvement the X-ray shows as compared to the few physical signs I find in certain cases of this type. Needless to say, they are frequently overlooked by examiners who have not all methods for examination available. I have numbers of these cases on my records and will cite one which is typical. This patient came to me in June, 1920. He was thirty-four years of age, five feet eight inches in height, weighed 150 pounds, and was exceptionally healthy in appearance. He had history of digestive disturbance for past ten years and slight bronchial cough. He had plenty of money and lived a rather active life both in business and a social way. He was not the type in which one would consider tuberculosis a probability. He had been ex-

amined in the past year by two excellent diagnosticians who had apparently not found anything suspicious from the lung standpoint, as they had not suggested X-ray films. This patient came to me because he had coughed up blood the previous day. X-ray films showed a rather extensive fibroid tuberculosis involving half the left lung, which must have been present for several years. I do not criticize the previous examiners nor take credit to myself for this diagnosis as I do not believe I would have diagnosed it on general examination without the history of hemorrhage and the aid of X-ray films. It simply shows the value of a complete examination and especially of X-ray examination.

There is another type of case which offers difficulties. That is the patient who has had previous active tuberculosis in a moderate stage, which has gradually absorbed, leaving only crackling rales after cough in the upper lungs. X-ray films of this type often show nothing which is interpreted as active tuberculosis, but physical examination shows the signs mentioned. An example of this type is a patient I had seen at intervals over a period of five years. She had on first examination a positive sputum, definite X-ray findings in upper lobe of left lung, and had had several pulmonary hemorrhages the first year I treated her. Five years later she had X-ray films taken of the gastro-intestinal tract and a routine X-ray film of chest. The report on chest showed no evidence of pulmonary disease, yet physical examination still showed rales over the lesion after a cough. This shows the diagnostic value of the physical examination in certain cases even though X-ray films show nothing definite.

We see another type of case which is very puzzling from the diagnostic standpoint, namely, the chronic pleural cases with effusion. These patients are easily diagnosed as pleurisy with effusion, but we cannot tell what is in the lung tissue until the fluid has been aspirated or absorbed. Then we often find a consolidation remaining in the lung which persists for a long period of time, in some instances for years. It usually produces no cough or temperature, but results in some dyspnoea and rapid pulse rate on exertion. These patients are partially but not entirely incapacitated. I feel they should be considered as tuberculous unless proven otherwise.

An example of this type of case is the following: Man, aged thirty-three, discharged from the army in 1919, and came to me for examination in 1923. He had developed pleurisy with effusion a few weeks after discharge from the army, which left a consolidation in center of left lung. This consolidation still is present after eight years. He is short of breath on exertion, somewhat under-weight and develops rapid pulse readily, but has no cough or fever. He has been drawing compensation from the Veterans Bureau as a case of tuberculosis for total disability during past seven years. He has appeared twice before an army retiring board and both times has been refused retirement on the grounds that he has not tuberculosis, based on testimony by army medical corps officers. This shows how difficult a definite diagnosis may be in these pleural cases. One group of government physicians diagnose him as definitely tuberculous whereas another group diagnose him as definitely non-tuberculous. Large subcutaneous injections of tuberculin followed by X-ray films to study the focal changes in the lung will aid in making a diagnosis in this type of case, but the reaction is often severe and may light up true activity in lung tissue. Personally, I would not want injections of tuberculin sufficient to produce focal reaction in lungs given to me; therefore, I do not use this method on my patients for diagnosis. I believe we can get a sufficiently accurate diagnosis to administer intelligent treatment without this method.

Prognosis in pulmonary tuberculosis is very important if the patient is the wage earner. It often involves the entire economic future of the family. It is necessary to know: First, will he recover? Second, if so, what length of time will probably elapse before he can again do income-producing work? Third, will he be able to return to the same position he was holding when tuberculosis developed? In answering the first question, will he recover, a number of factors must be considered. The extent of the pulmonary involvement and, more important still, the character of the lesions should first be studied. A moderate infiltration throughout half of one lung is often curable if the lesions are fibroid in character, whereas, the same amount of trouble may indicate an incurable case if the lesions are of the soft, ulcerative, progressive type. The habits of the patient must be considered. If his habits have been bad, his prognosis would be better than if he had had good habits. This sounds para-

doxical, but it means simply, if a man is living, sleeping and eating temperately and properly and in spite of that fact develops tuberculosis, he must have very poor natural resistance to the disease, whereas, with one who has had bad habits we often make a substantial start towards a cure simply by correcting them. The temperament of the individual plays a part. I find that patients of the neurotic, high strung type do not improve so readily as do patients of a more phlegmatic disposition. Cases with all the active involvement in one lung are apt to do better than when there is less extensive involvement in both lungs. This is especially true because many of these patients can take pneumothorax treatment and the ultimate outcome in advanced cases is much more favorable if they are able to take artificial pneumothorax. As an example, the following case is one of a number. Married woman of twenty-five years came to me first in 1913. She had advanced pulmonary tuberculosis involving most of left lung, and of the soft ulcerative type. Dr. Minor, of Asheville, had started pneumothorax treatment a few months before I saw her. She continued to run high temperature and Dr. Minor sent her home with a very poor prognosis, but advised that the pneumothorax be continued. I gave her treatments at monthly intervals for two years. She made a completee recovery, has had two children since 1915, and is still in perfect health fourteen years after taking the treatment. A second case was started in 1915 on account of increasingly frequent hemorrhages over a period of several years. She had a soft infiltration throughout one entire lung and made complete recovery on use of pneumothorax over a period of two and one-half years. She is still well twelve years after her treatment, and X-ray films taken a few weeks ago show only a few calcified nodules in one apex.

The presence of complications in other organs, especially the larynx and intestinal tract, practically always means a very poor prognosis, although with the use of heliotherapy some of these cases are eventually cured.

Hemorrhage cases do better than do those who have never had a hemoptysis, there being about twice as many cures among that type of patient. I recall a patient whom I saw first in 1912. He had several hemorrhages at gradually decreasing intervals over a period of three years. His lung lesion was a dense tuberculosis confined to the upper portion of right lung, the left lung being normal. Since 1915, he has had no hemorhage or temperature, his weight has increased from 150 pounds to 210 pounds, although he still has some dyspnoea and cough. He has held a responsible executive position without losing any time from sickness for the past twelve years, so that, practically speaking, he is a well man. I have seen many cases such as the one cited.

Patients with a moderately large heart, extending well towards the left, and with a blood pressure up to normal or above normal do better than those with the long narrow so-called "drop heart" with blood pressure below normal. The most important prognostic aid we have, however, is the clinical picture. The weight chart, amount of cough and expectoration, amount of temperature rise, and the increase in pulse rate are after all the most valuable guides we have as to the virulence of the tuberculous infection and the resistance of the patient. Cases in which the temperature and pulse will not return to normal after one month's rest in bed should be considered as having a doubtful prognosis.

Cases who, after several months' rest in bed still run temperature and rapid pulse with no improvement in their cough are very unlikely to ever return to normal active life. There are exceptions but in my experience they are very rare.

Summary

A *favorable* prognosis can safely be given in the following cases: Patients having slight or moderate involvement tending towards fibrosis; those having good sized heart with normal blood pressure, who are increasing in weight, and who get rid of temperature and rapid pulse with a cessation or marked decrease in their cough in less than a month in bed. This type should be considered favorable for complete cure. They will probably be able to return to work within a year. They can safely return to the same work, provided it does not entail marked physical exertion. If so, they should seek a more sedentary occupation.

A *doubtful* prognosis should be given in the following: Patients who are stationary or losing weight; those having a moderate involvement which is of the soft ulcerative type with numerous rales in chest, and who do not get rid of fever and rapid pulse and cough after a month in bed. Patients who become afebrile and stop coughing but have low blood pressure

and long narrow "drop heart", with rapid pulse on exertion, should also be considered doubtful as to cure.

A *poor* prognosis should be given in the following: All cases having tubercular complications, no matter what the lung involvement may be; cases having definite moderate lung lesions who are not free of fever, cough and expectoration after several months' rest in bed; all patients having advanced lung lesions who are losing weight and continuing to cough even though the temperature is normal.

Medical Science Building.

MENTAL READJUSTMENTS.*

By P. G. HAMLIN, M. D., Williamsburg, Va.

The problem of psychotheraphy is probably most often one of readjustment. Most young men and most young women in this great Democracy start perhaps with the idea that the world is their oyster, to be opened at pleasure. If one is not stranded on the rock of puberty, and if the protoplasm handed on to him by his ancestors is good, the world will prove not to be his oyster, but a battlefield where eternal vigilance and hard work will be, at least in part, rewarded. If, however, the nervous system he inherits is not so sound as to stand the wear and tear of every day usage, he and his physician, the psychiatrist, come up against the problem of readjustment. We cannot make over the individual's nervous system; therefore we must make over his environment, for mental health consists simply in one's adjustment to his environment, and mental ill health his maladjustment to this environment. If this maladjustment is pronounced, he has a psychosis; if it is less pronounced, he has an eccentricity, a nervous breakdown, a temperament, mood, or something similar.

It is merely a philosophical and not a practical procedure for the psychiatrist to say this patient has dementia precox, or manic depressive psychosis, and that his conduct will be thus and so, and that the prognosis for immediate and ultimate recovery is such and such. This does not help either patient or psychiatrist. Diagnosis which does not offer some hope of treatment is worth nothing to the patient. Must psychiatry, alone of the branches of medicine, say that it is not to alleviate suffering, but merely to tag a label to the sick? What difference does it make to some poor soul who, in competition with his cleverer fellows, has developed delusions of persecution, that the psychiatrist peering over his glasses wisely says, "Manic depressive psychosis?" None.

If the moving finger writes indelibly then the man who deals in mental medicine must be able to read between the lines. He must borrow leaves from the books of the novelist, the priest, the physician, the biologist, and the psychologist. He must believe that the manifestations of the thing we call mind are worthy of study, even in the humblest individual. Did a belief in what one might call "the hereditary laws of gravity" enable the Wright brothers to conceive the aeroplane? No. The power of mind which visualized a new use of the gasoline engine did that. DaCosta, in his article on old Blockley[1] described the case of a paranoiac committed to that institution who invented and perfected a method of preparing and sterilizing catgut. This method was used in the Jefferson Hospital in Philadelphia for many years and was still in use when DaCosta's paper was published. The function of a psychiatrist is not to label a psychosis, but to assay the power of the mind which has it. To this task he must bring all of the resources at his command, imperfect as they are.

The psychiatrist in regarding his patient first should wish to determine whether the condition presenting is fundamentally inherent or acquired. Often there is a combination of these two factors. Is this man's mental status dependent upon toxic-infectious processes, or is it due to faulty mental mechanisms, either inherited, or else springing from the unconscious, that hypothetical region inhabited by phantom shapes that come and go?

The toxic-infectious group presents a problem comparatively easy of solution. The diagnosis, prognosis and indications for treatment are here fairly clear cut. But in the other and larger group, dementia precox, the manic depressive group, paranoia, paranoid conditions, and borderland states treatment is essentially a matter of readjustment.

Janet[2] has put it clearly and cleverly, "One must live within his mental income. No two individuals have the same amount of mental capital. When the mental reserve or surplus is called upon to excess, then is disaster near, and the psychiatrist must take stock of his patient's assets, his liabilities, his overhead. Expenses must be cut; mental economy

*Read at the annual meeting of the Walter Reed Medical Society at Yorktown, Va., May 26-27, 1927.

must be the watchword in his household."

A biographer has said of Lord Kitchener that he was never "a race horse among cows." Woodrow Wilson could not make the base ball team at school, and there is some evidence to support the belief that he felt his bespectacled inferiority greatly. However, the school was probably deprived of a poor base ball player, and the country gained a great statesman. Our system of government and our social system encourage the idea that the tailor who learns to read and write after he is twenty-one may become President; that the son of the shoemaker may go to West Point and become the General of the Army; that the road leads direct from the log cabin to the White House. These are in individual instances excellent ideals and undoubtedly make for progress. However, as a doctrine to be taught, as a code to be preached, they are questionable.

A man of thirty-two, who was admitted to the hospital, held a marine engineer's certificate. He held a commission in the U. S. Navy as an ensign during the period of emergency, serving for three and a half years. Since his discharge from the U. S. Navy he has been unable to hold a job operating a street car longer than two weeks. However, with a little financial help, he can make a living on the outside crabbing and fishing. Are we to say, because he cannot build a better mouse trap than his neighbor, he shall not have his place in the sun? If he is a hewer of wood and a drawer of water, is he not necessary for the rest of us to carry on? A psychosis appearing under stress is often cured or alleviated when that stress is wisely removed.

Obviously the best time to assay the individual's mental capital is in the early years. It is then by wise investment that the best returns may be looked for. A psychopathic tendency corrected in childhood yields rich rewards in adult life. Is not mental hygiene as important in the schools as oral hygiene—fly swatting, or malaria control, typhoid inoculation, or diphtheria toxin antitoxin? All these procedures are of unquestioned value. Infections give warning of their intention to destroy. Fever, leukocytosis, malaise—these are like red signal flags to the patient and his friends. However, faulty mental functioning is more insidious and less likely to be heeded. Yet if not corrected it will probably spell ruin. The question, "Canst thou minister to a mind diseased?" is answered in the affirmative only when the ministering is done early and the individual's environment can be completely controlled.

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MANAGEMENT OF THE THIRD STAGE OF LABOR.*

By M. T. VADEN, M. D., Buena Vista, Va.

The third stage of labor, strictly speaking, lasts from the delivery of the child until the placenta and its membranes have been delivered. In my discussion of it, I shall include everything that has to be done until the doctor is ready to leave the house.

The care of the infant comes first. As soon as the baby is on the bed, or even as its head emerges from the vulva, have a piece of sterile gauze ready and cleanse its mouth and nose of all mucus. Grasp the child by its feet and lift it straight up with its forehead just touching the bed. This will cleanse the air passages of any fluid which may have been aspirated during birth.

Now lay the child on its right side with its head lower than its body, its hips elevated, and supported by a folded towel.

If respiration has begun and is progressing, there is no need to resort to artificial means, and the child may be covered with a warm blanket until time to sever the cord.

If there is any difficulty or delay in beginning respiration, slap the child on the back or buttocks. If breathing does not commence, artificial respiration should be practiced at once. I prefer and use the mouth to mouth method, which is as follows: Lay a piece of sterile gauze over the infant's mouth, place your mouth over this and blow air into its lungs, blowing in just what you can hold in your mouth at one time. The rate should be about twenty times to the minute. Press the child's chest after each inflation to expel the air. Continue these maneuvers until the child's skin becomes pink and it breathes of its own volition. It is a very good practice, especially if the room is cool, to place the child in a warm bath while carrying out this treatment. Should the heart action be feeble, a hypodermic of adre-

*Read before the Rockbridge County Medical Society, April, 1927.

nalin, one to one thousand, 3 m., should be given intramuscularly.

The child being in good condition, it is now time to sever the cord. Strip the Wharton's jelly in the cord away from the child. Clamp the cord, about two inches from the belly, with a pair of artery forceps. I always tie the cord in two places,—first, close to the skin at the margin of the navel, and, again, about half an inch distant, leaving the stump only about one inch long. This will favor its early separation if kept dry. Always dress the cord by wrapping it with sterile gauze before the baby is washed, changing to a fresh sterile dressing after the bath.

Grease the baby with olive oil and have it given a bath with a cloth or sponge. Never put the baby in the bath for fear of infecting the cord. The nurse should be instructed to bathe it in this way and to keep the cord dry until it separates.

As soon as the cord has been severed, place a clean towel under the buttocks of the patient. Clamp the cord at the vulva with a pair of artery forceps. Put a clean basin containing the cord snugly up against the woman's buttocks. The artery forceps will show any advance of the cord, one of the indications of the separation of the placenta. The basin will serve to catch the blood as a check on the amount lost.

Palpate the uterus through the abdominal wall to see that it remains firmly contracted. Now sit by the bed, holding the hand over the uterus. If it remains firm and there is no external bleeding, all is good and well.

It is best not to hurry the separation of the placenta, but wait for the signs that it has separated,—indicated by contraction of the uterus, which rises higher in the belly; the lower segment of the uterus becomes distended, and there is several inches, advance of the cord into the basin.

Always endeavor to save the patient's blood, for hemorrhage predisposes to infection, delays and inhibits lactation, produces anemia, and delays the recovery of your patient.

It might be well here to enumerate some of the signs of hemorrhage, indicated by faintness, dizziness, air hunger, nausea, yawning, thirst, low blood pressure.

Should the uterus become soft and distended with blood, massage should be practiced, executing a kneading movement with the hand. Should hemorrhage continue after the uterus becomes hard, inspect the vulva for injury or tear, as the source of the bleeding. In case of persistent bleeding, it becomes necessary to deliver the placenta immediately. Massage the uterus vigorously and, with the first contraction, do the Crede expression, grasping the uterus firmly, the fingers behind, and the thumb in front; shove in the axis of the pelvic inlet, at the same time squeezing firmly to expel the placenta. As soon as the placenta is in the vagina, have the patient bear down to expel it. Failing in this, use the uterus to shove it out, at the same time straightening out the cord, but do not make undue traction upon it; simply use it as a guide in making the delivery. When the placenta and membranes appear, they should be grasped in the hand and gently removed. Massage the uterus again, and give a drachm of ergot by mouth and one c.c. of pituitrin hypodermically.

It sometimes becomes necessary in case of hemorrhage to do a manual expression. This requires a great deal of care, as it is considered one of the most dangerous of obstetrical procedures.

Draw the patient across the bed, support one leg with a chair, and have someone hold and support the other leg. Prepare your solutions of 1:1000 bichloride and 1 per cent lysol. Have all instruments and gauze sterile and at hand. Bathe the vulva with bichloride solution, washing out the vagina with lysol. Always use rubber gloves, even though they interfere somewhat in using the finger nails to separate the placenta. If the hemorrhage has not been too severe, give an anesthetic. If there is much shock, operate without one. Pass the gloved hand into the uterus. Gently insinuate the fingers beneath the placenta, with the other hand on the belly and grasping the fundus, separate the placenta in its entirety. As soon as separation is complete, grasp the placenta firmly in the hand and massage and shove down on the fundus, allowing the uterine pains to expel the hand and placenta. This method will prevent tearing the placenta into fragments, with the danger of leaving portions of it. Having delivered the after-birth, catch the cervix with a pair of cervical forceps, drawing it down and inspecting it for a cervical tear, if it has not already been detected by the hand in the uterus. If there is no hemorrhage from such a tear and the bleeding is continuing, it is best to pack the uterus at once.

In packing the uterus I put my left hand

into the vagina, using the index and middle fingers as a guide. With a pair of packing forceps, carry the gauze well up into the fundus, keeping a watch out for the contracting ring, so as not to stop here with the packing. Have someone hold the fundus firmly while packing.

As soon as the uterine cavity is pretty well filled, grasp the fundus with the right hand and shove down, at the same time pressing upward with the left, thus firmly packing the interior of the uterus. Now pack the vagina tightly and put on a bandage to retain the packing. The packing should be removed carefully after 24 hours.

If your patient is shocked, hypodermoclysis should now be started.

In my practice it has only been necessary to pack on two occasions. The bleeding in both cases was controlled satisfactorily. I recall two other cases of severe post-partum hemorrhage, which were found to be due to deep cervical tears. Repair of the tears controlled the bleeding.

Before discarding the placenta, inspect it carefully. Go over each cotyledon, wiping away the blood and examining them minutely. Then feel and inspect the edges to see that no portion has been torn off. Now examine it carefully in the center, all rough spots should be washed and inspected most carefully. Look out for a placenta succenturiate. Examine for absence of membranes from the sides; if such place be found, determine if a blood vessel has been broken off at this point.

A smaller placenta than usual for the size of the child delivered should arouse suspicion of a second placenta.

A small piece of membrane may be left to Nature to take care of, but always instruct the nurse that it has been left, so as to avoid criticism when it is passed.

It is imperative to remove all of the placenta before leaving your patient. Retention of a small piece may cause hemorrhage; it will certainly cause severe after-pains, and a foul smelling lochia is likely to result. Sub-involution of the uterus may be a sequela.

The child should be carefully inspected for any deformities or birth injuries. It is rather embarrassing to have your attention called to injuries or defects, upon your return visit, that you had not noticed on the day of delivery.

Cleanse the eyes carefully and put two drops of one per cent silver nitrate in each eye. It is best to wait until after the placenta has been delivered to do this, as you are now not so rushed and can give the eyes the attention they deserve.

Your time may now be well spent in cleansing your instruments, drying and powdering your gloves, weighing the infant, etc.

Palpate the uterus again to see that it remains firm. Inspect the vulval pad to see there is no hemorrhage.

If an hour has elapsed since delivery, it is safe to leave, but before taking your departure, make sure that the mother is in good condition, that there is no headache or vomiting, that the pulse is good, and that the baby's cord is not bleeding.

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DIFFICULTIES IN ADMINISTERING THE PROPER DOSES OF INSULIN IN A CASE OF DIABETES, COMPLICATED BY PUS INFECTION, AND OTHER NOTEWORTHY OBSERVATIONS, AS ILLUSTRATED IN A PARTICULAR CASE.*

By F. M. PERROW, M. D., Lynchburg, Va.

Recently, at a meeting of the staff of the new Virginia Baptist Hospital, of which I am fortunate in being a member, I was given the task to review the records of the cases of diabetes that have been treated in this hospital to date, and report any interesting data I might find in these cases at the next monthly meeting of the staff.

The Secretary handed over to me the records of fifteen cases, some of which were very voluminous. They were about equally divided between cases of diabetes with surgical complications and diabetes without surgical complications.

The group contained—

1. Cases with simple low tolerance, requiring simple dieting.

2. Simple low tolerance cases with obesity, requiring special dieting.

3. Simple cases, adults, which required dieting and insulin—cases below C 50, P 50, F 125 tolerance, i. e., and showed sugar in urine on this diet.

4. Cases complicated by Bright's disease, and exhibiting a high renal threshold.

*Read before the South Piedmont Medical Society, April 19, 1927.

5. Cases complicated by infection and other surgical complications.

6. Cases combining 4 and 5, that is, Bright's disease, infection and other surgical complications.

For my paper before this Society I shall report fully only on one of these cases which, to me, was the most interesting and valuable. This case definitely exhibited the difficulties of determining and keeping balanced the proper dose of insulin. I believe, also, this case demonstrates that the blood sugar in diabetes fluctuates with pus infection,—infection partially relieved, blood sugar falls; infection completely removed—striking drop in blood sugar. Thus, with your patient on same diet, blood sugar rising denotes spreading infection, although he looks the same.

This case also illustrates the *huge* doses of insulin that a moderately severe case of diabetes may require when complicated by pus infection, as demonstrated by the very small doses required when the infection was completely removed. This case also illustrates that, following operation requiring general anesthetic, glucose should be given intravenously immediately, matched against relatively large doses of insulin given subcutaneously, and that this should be repeated several times, because patient may vomit all food by mouth and insulin may cause a reaction.

This case also illustrates the quandary in which one may find himself to say whether it be a case of uremic, diabetic, or insulin coma.

This case likewise illustrates mistakes which one may partially avoid—mistakes which I feel I have a right to report in that I made them myself, but which have been very instructive.

I might further remark that insulin seems to have had no influence on the temperature curve in this case except in severe insulin reaction, or may be to have held the infection in abeyance; that the temperature curve corresponded with physical signs of increasing or decreasing infection. The temperature was highest during first week—regular pus temperature,—and was reduced somewhat by simply lancing points of evident pus, irrigating, etc. From this time to first operation, a period of 2½ weeks, there was very slight variation from day to day—evening around 101°, morning 99°. Succeeding first operation, temperature was much lower, average run being evening about 99½°, morning subnormal, until a few days before amputation, February 24th, when it began to rise a bit. After amputation, the usual traumatic postoperative temperature was present for a few days and then became normal.

This was a case of diabetes referred to me by Dr. F. O. Plunkett, in an old man 67, complicated by chronic Bright's disease, as evidenced by urinary findings and marked arteriosclerosis and symptoms of myocarditis. He was brought to Lynchburg after having been taken suddenly sick with delirium and unconsciousness coincident with symptoms of infection of his foot. I first saw him at the Baptist Hospital December 27th, after he had had two or three days of treatment, and then his mind was quite clear,—just a little off at times. His foot was not swollen, but had a small ulcer, or rather hole about the size of the end of a lead pencil, at the base of the second toe, plantar surface, from which could be expressed a few drops of thick pus with a black stringy substance like gangrenous tissue. At first, and for eighteen hours, he was put on a diet of broth only, the urine the following morning showing sugar ++++ and a trace of acetone. No blood sugar test was made just then as, of course, it would be high and give no additional information necessary for treatment at the time. The following twenty hours' mental status being very good, foot treated, he had, besides broths, four Uneeda crackers and twenty units of insulin. On this the urine showed 1.2 per cent sugar in 46 ounces—equivalent to 16.5 gms. of sugar,—whereas, the crackers contained only 20 gms. of carbohydrate. Therefore, I knew while I was giving a unit of insulin per gram of carbohydrate it was not enough; mind clear and foot about the same. In the next twenty-four hours, he had six crackers, two eggs, half ounce butter, and broths equivalent to 30 grams carbohydrate, etc., but 50 units of insulin. On this the urine contained no sugar, but still a trace of acetone, and blood sugar was this day only 68 mg. per 100 c.c. of blood. (Here I wish to remark that the trace of acetone continued throughout this man's illness and was still present when he was discharged from hospital, and every diabetic symptom had disappeared. I do not know how to explain this. Also, after this date sugar was not again found in his urine while he was in the hospital). Thus, on a diet of 30 grams of carbohydrate,

etc., and 50 units of insulin, I knew he was getting too much insulin. I reduced the insulin to one unit per gram exactly and blood sugar test 48 hours later was normal, 100 mg. to 100 c.c. Diet was, however, far below basal requirements, only 30 carbohydrate, etc., so I raised it to C 60, P 44, F 150, equalling 1,766 calories. All of this was taking place the first week, foot being lanced twice and free pus evacuated, pus having collected on the dorsum of the foot near the base of fourth toe. However, the foot exhibited practically no swelling.

My experience with insulin to this date was that it was very powerful and usually 1 unit insulin to 2 grams carbohydrate in the usual diabetic ketogenic anti-ketogenic formula, was enough, and, though I did not get a normal blood sugar until I raised it to 1 for 1, I was fearful about giving 60 units to handle C 60, P 44, F 150, so I gave 45 units. Note the result on the blood sugar: On January 5th it was 200 mgm., diet the same. Insulin was raised to 60 units, i. e., 1 for 1, and five days later foot still pusy but no evident extension of inflammation; blood sugar was 147.8 gms. to 100 c.c. This was January 10th. What was the explanation of this? There was retained pus, though no special signs, and more of it, I now know. Ten days before it had been demonstrated that the trouble was so severe that it took 1 unit per grm.,—twice the usual quantity;—now it would require even more. I knew I was giving dangerously large doses for his diet, and, knowing frequently with improvement of infection this dose would probably be enough. I did not increase it for a week, doing only careful daily cleansing, dressing, and keeping wounds wide open, but no improvement was seen. So I raised the insulin to the very large dose of 68 units a day for a diet of C 60, P 44, F 150. No insulin reaction took place. At this point—January 17th—slight increase of temperature curve was noted; pain in foot at night required small doses of morphine; foot showed outward signs of beginning to get worse, wound had more pus, and there was some bogginess on dorsum, etc. Thus, on January 21st he had his first real operation—under gas anesthesia.

Incision was made on plantar surface of foot, beginning at the base of second toe, carried outward about an inch, and then backward to middle of foot over area corresponding to greatest tenderness. Incision was deep—to the deep tendons—and free dissection was made with finger of all the soft tissues from deep tendons; some pus was present here. Also an incision was made on dorsum at base of the fourth toe, and finger carried through wound to plantar incision. Wound was packed with iodoform gauze.

This day—the day of operation—I believe a mistake was made. Patient had his morning meal and usual dose of insulin, which was correct. He had no midday meal or insulin—operation being done at 5 P. M.; morphine followed operation and also insulin 24 units. Between 8:30 P. M. and 12 that night, the nurse has on the chart: "8:30—Patient had a chill, did not perspire after the chill. 9 P. M.—T. 100.3. Patient fell out of bed; seemed unconscious at the time but was perfectly rational after getting back in bed. Patient says he fell while he was asleep. Perspired freely." Balance of night "not a good night." I am sorry I did not know this at the time. To me, he needed glucose intravenously, and I am sure from a later experience this would have been right—at least 20 gms. in 5 per cent solution.

The following day, January 22nd, his regular diet, C 60, P 44, F 150, and regular dose of insulin were reinstated, and for the succeeding days, barring pain at times in foot, he seemed better. Blood sugar test on January 26th showed that the insulin now was more effectual, 133.3, whereas, on same diet and insulin it had been before operation 147.8.

Now notice a change. On February 1st—ten days after operation of free incision—same diet and same insulin caused symptoms of insulin reaction, controlled by orange juice. Insulin reduced to 60 units, with diet on February 2nd remaining the same. On February 3rd blood sugar test 100 mgm.—normal again at last. Foot was looking good—incision wide open—diet still the same and insulin 60. Next succeeding two or three days patient had mild symptoms of too much insulin and dose was reduced to 50 units a day—same diet. From February 6th to 20th patient was kept on 50 units, same diet, foot dressed daily, no symptoms referable to insulin, but on 20th there was slight reaction, controlled by orange juice. Several times here insulin reaction occurred, and insulin was reduced to 40 units a day, giving the same diet. This treatment was continued without reactions until amputation on February 24th.

Amputation was considered advisable because of continuous slight evening temperature which had become slightly more elevated, though wound was healthy looking—all but the dorsum of foot,—and *pain in foot*. Blood sugar this day 95 on diet—C 60, P 44, F 150—and 40 units insulin. This was just right. On this day I tried to prevent untoward symptoms from operation by giving him a goodly quantity of carbohydrate before operation, by matching his regular breakfast against 15 units insulin, and at 12 o'clock noon twelve ounces of milk against 12 units insulin. I was counting on this to displace necessity of glucose following operation.

Operation was done by Dr. J. W. Devine. Amputation high above the knee. Flap method and flaps neatly approximated. Operation consumed about 40 minutes. After the amputation, the foot was dissected. Most surprising extent of pus invasion was found. It had gone beyond the deep tendons of the plantar surface and was in liquid quantity between the bones of the tarsus.

Quite severe shock followed operation, for which morphine adrenalin and atrophine were used, together with hypodermoclysis. Good result from stimulant by midnight.

On February 25th—day following operation,—28 oz. milk and the juice from 2 oranges were given, equal to a diet of over 60 grm. carbohydrate distributed along with 70 units insulin. He vomited most all of this food and delirium developed in afternoon; 20 grm. glucose was given that night, but he was restless and perspiring most of night, although his mind was clear morning of 26th. Morning of 26th, blood sugar 95. In succeeding 24 hours patient had diet of oatmeal and milk equal to C 50, P 25, F 22, and insulin 45 units, but vomited most of milk, and that night was flighty and vomited large quantity fluid.

On February 27th he was still at times momentarily flighty; very little sleep; nauseated. During day patient was given insulin matched against oatmeal and cream, 1 unit per grm. of carbohydrate, but he refused to take but small portions or none at all. Now, clearly, too much insulin again, and I gave him 30 grm. glucose in 5 per cent solution about 7 P. M. During night sypmtoms were much better but still he continued sweaty, restless and a trifle flighty and drowsy.

On February 28th insulin was markedly reduced; took all of his oatmeal and cream for breakfast, and at 10 A. M. he looked like he was well. During this day he had 52 units insulin against 73 carbohydrate, and that night was feeling well and had a good night.

On March 1st—fifth day following operation—was noted the most interesting and clearly demonstrated power of insulin when pus infection was removed.

7:30 A. M.	Insulin 20 units.
8:00 A. M.	1 oz. oatmeal, 1 orange, 2 oz. cream and ½ oz. butter—equal to C 32; P 13, F 22.5.
12:00 Noon	Perspiring some and dizzy.
12:30 P. M.	Insulin 20 units.
1:00 P. M.	1 shreaded wheat biscuit, 2 oz. cream, 1 egg—equal to C 25, P 11, F 30.
2:45 P. M.	Feeling queer, flighty, perspiring.
4:00 P. M.	When I arrived, coma and heavy sweat. Here he had gotten 40 insulin and 57 of carbohydrate (certainly moderate as compared with his former tolerance). To make sure just what this coma was, I ordered blood sugar test.
4:30 P. M.	Blood test 45 mgm.; clearly in-insulin coma.
5:30 P. M.	20 grm. glucose in 5 per cent solution.
6:00 P. M.	Patient talking, expression bright.

Saltine crackers during night. Had very good night.

March 2nd—Apparently well. Put on diet C 68, P 59.5, F 132 and insulin 34, i. e., 2 for 1.

March 3rd—Blood sugar 111.1.

March 4th—In afternoon, symptoms of too much insulin; insulin reduced to 20 units daily and diet raised to C 73, P 60, F 132.5.

March 8th—In chair—feeling fine.

March 9th—Blood sugar 100; calories 1744.5, on a diet of C 73, P 60, F 132.5, and insulin 10 units twice a day.

Discharged—Primary union.

Summary

1. Besides the known difficulty of estimating severity of diabetes by outward appearances, it is even more difficult to estimate extent of pus infection in a diabetic foot by appearances.

2. Diabetic treatment seems to have no in-

fluence on general temperature curve in a case of pus infection in a diabetic. Temperature curve in this case corresponded to retained pus.

3. A case of diabetes complicated by pus infection may require triple or quadruple doses of insulin as compared with dosage 10 days after infection is removed.

4. In a diabetic with pus infection kept constantly on same diet—no sugar in urine,—blood sugar fluctuates with degree of infection; infection partially removed, blood sugar falls some; infection completely removed, striking drop in blood sugar. Thus your insulin dose has to vary.

5. It is best to give glucose intravenously, insulin subcutaneously—unit per gram—immediately following operation in severe diabetes; where a general anesthetic is used, probably repeat several times. Patient may vomit food swallowed and you will get an insulin reaction.

HYDATIDIFORM MOLE.*

By S. PALMER HILEMAN, A. B., M. D., Millboro, Va.

Hydatidiform or vesicular mole is admitted to be a disease of the chorion in which the terminal ends of the villi form transparent grape-like vesicles held together by little pedicles. These vesicles range from the size of a millet seed to that of a large grape. The process usually comes on before the fourth month of pregnancy, and the foetus, having its nutrition impaired, is destroyed, so that when the mole is expelled, frequently one finds no foetal remains. Williams states that spontaneous expulsion is rarely delayed after the sixth month.

There is great difference of opinion as to the frequency of vesicular moles. Gebhardt observed twelve cases in 16,000 pregnancies; Hirst states one case in 3,000 to 4,000 pregnancies; Williamson one in 2,400 pregnancies, and Madame Boivin one in 20,000. Gordon states that out of 4,500 abortions, twenty-one vesicular moles were discovered, and he feels sure that many early cases in this series were overlooked, for often careful examination is necessary to determine the presence of a few vesicles. He suggests that the aborted products, after careful washing, be placed under water, and this causes the distended vesicles to rise to the surface. The condition may develop in young women, but is most frequent in multiparous women in the late child bearing period.

The diagnosis can only be positively made when the cysts are expelled or are palpated through the dilated cervix. There are three signs, however, which are said to be very suggestive:

1. A greater enlargement of the uterus than absent menstrual periods would lead us to expect. (In exceptional cases the uterus may be smaller).

2. Irregular hemorrhage, and a brownish, watery, vaginal discharge. Sometimes hemorrhage is profuse.

3. A doughy, indefinitely outlined uterus, with absent fetal heart sounds.

In addition, there may be nausea, anorexia, extreme exhaustion, and sometimes renal insufficiency. Very early the only sign is said to be the brownish vaginal discharge.

It is of interest that by far the greater number of vesicular moles are associated with cystic changes in the ovaries, the crysts being identical with those of the corpus luteum.

The mortality is variously estimated from 10 to 25 per cent. DeLee gives 16 per cent; Hirst 18 to 25. The cause of death is hemorrhage, low grade sepsis superimposd on an anemic state, and the development of chorio-epithelioma. It is significant that half of all chorio-epitheliomas follow vesicular moles, and that 16 per cent of vesicular moles become malignant.

After the expulsion of the mole, the woman may again become pregnant, and this pregnancy pursue a normal course; or, with succeeding pregnancies, the mole may again develop. Williams states that vesicular moles may in rare instances be associated with pre-eclamptic toxemia.

The following methods of treatment have been employed: As soon as the diagnosis is made, the uterus is emptied, the cervix being dilated with a steel dilator or the gauze pack, and every care exercised to prevent perforation of the uterine musculature, already weakened by the invasion of the growth. Some men have employed curettage, but most observers advise against its use. After this the patient should be carefully watched for a few months for hemorrhage or metastases. Vineberg proposed hysterectomy in those cases over forty years of age. Gordon suggests radium or deep X-ray therapy. Rawls in 1922 reported favorable results with the former, used for hemor-

*Read before the Medical Association of the Valley of Virginia, at Clifton Forge, May 26, 1927.

rhage two months after the uterus had been emptied of a mole through operation done as a Caesarian section.

The following case of vesicular mole is reported because of the rarity of the condition and not because it differs from other cases I have seen in the literature.

Mrs. B., white, forty-three years of age, came to my office January 22, 1927, complaining of general weakness and a bloody vaginal discharge which had been present about a month. Just previous to this she had missed one menstrual period. She had been pregnant twice in the six years of her married life, having a child now five years old, and having been operated on—Caesarian section—for placenta praevia in June, 1925. She had never aborted, and her general health had been good, except for typhoid thirteen years ago, and dysmenorrhea when a girl. On examination anemia was apparent, the pulse was rapid (about 95), and temperature one degree above normal; otherwise negative except for the pelvic findings. There was a slight brownish vaginal discharge, a softened but not dilated cervix, uterus boggy and its outlines imperfectly defined, the fundus apparently in the position of a three or four months' pregnancy, with no foetal heart sounds. The patient was advised to go to the hospital at once. This she failed to do and I heard no more of her until the night of February 7th when I received a call to come to her home at once. On arrival I found her having severe labor pains and bleeding profusely. No products of conception had been expelled. The cervix was slightly dilated and a gelatinous mass was felt protruding. Uterine contractions were strong and with the aid of the fingers the expulsion of about a litre of vesicular mole and old blood with recent clots was accomplished. No foetal remnants were found. Pituitrin was given, and the vagina tightly packed with gauze. About one-half hour later the patient was given morphine and removed twelve miles to the hospital where she was seen by Dr. J. M. Emmett. That night, under ether, Dr. Emmett did a rapid dilatation of the cervix and with the fingers cleaned out the uterine cavity, obtaining a few pieces of the mole. The condition of the patient was such that it was felt best to postpone further operative procedures for a while. Five days later Dr. Emmett did a hysterectomy and wrote me that the uterine walls had been well infiltrated by the growth. Microscopic examination, although not showing definite malignancy, was in some places suggestive. The ovaries were not cystic. Convalesence was rapid up until March 2nd, when there was some purulent drainage from the lower angle of the wound. This became serous and subsided in a few days, to be followed in a week by a rise of temperature and an indefinitely outlined mass in the region of the left broad ligament. This, however, subsided without drainage in ten days, and since that time the patient has felt well, has been up and about, and has gained fifteen pounds.

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PILONIDAL SINUS.

By HARRY M. HAYTER, M. D., Abingdon, Va.

Recently, as I sat talking to the chief of our surgical service, a patient entered his office and gave as his complaint, the presence of an abscess low down and near the mid-line of his back, at the same time indicating the region of the sacrum. When questioned as to the duration of this condition, he answered that it had been present for several years, and supplemented this statement with the information that it had been "lanced four or five times."

As this patient entered the examining room, the surgeon remarked that, if he had to make a snapshot diagnosis, he would say that the man was suffering with an infected pilonidal sinus. Examination proved this diagnosis to be correct.

If, on seeing such a case, one should become so interested as to look into the literature on this subject, he will find that it is scanty. The existing literature was thoroughly reviewed and a study of sixty-one cases given in a paper read

by Dr. H. B. Stone of Baltimore, before the Southern Surgical Association on December 11, 1923, and published in the *Annals of Surgery*, March, 1924.

In view of the fact that such brief discussions of this condition are given in the standard textbooks of surgery, and of the scarcity of original articles, one might conclude that the condition is one of little importance. However, it is not so to that unfortunate individual who possesses one which has become the site of infection; neither is this true for the physician who, not recognizing the true nature of the condition, hopes to obtain a cure by incision and drainage of the area involved.

The condition was first described by J. M. Warren in 1867. The diagnosis is easy if one has ever seen a case, or if the existence of such a condition is kept in mind. The lesion occurs more frequently in the male than in the female. Of the sixty-one cases studied by Stone, only ten, or sixteen per cent, were females. All of the sixty-one cases occurred in the white race. Forty of these sixty-one cases were seen in the Johns Hopkins Hospital which has a very active colored service. However, not a single case was seen in the negro. The average age at which the lesion makes itself manifest in this series of cases was twenty and one-half years. In a series of twenty-two cases seen on the service of Dr. Hugh H. Trout at the Jefferson Hospital in Roanoke, Virginia, the average age at which the condition began to cause symptoms was twenty-one years. All of these cases occurred in the white race. Of this series of twenty-two cases, six of the patients were females and sixteen were males.

The lesion, while being a congenital one, usually makes its presence known in early adult life.

In 1880, Hodges gave the name af "pilonidal sinus" to the lesion, which is located on or near to the posterior mid-line of the body in the region overlying the sacro-coccygeal joint, and which presents itself, in its uncomplicated form, as a small, round or oval orifice, with smooth skin covered edges. The orifice is from three to five millimeters in diameter, is free from granulations, and may or may not contain a small tuft of hairs.

If infection has taken place, which is practically always the case, as it is the infection which gives rise to the symptoms from which the patient seeks relief, the picture is that of a red, swollen, tender area, with pus discharging from the original epithelial lined sinus, as well as from others which have developed spontaneously, or have resulted from simple incisions made into the area involved. Such sinus can be differentiated from the original one by the fact that it contains granulation tissue.

The conditions from which an infected pilonidal sinus must be differentiated are fistula in ano, osteomyelitis of the sacrum and infected haematoma.

Fistula in ano is located nearer to the anal orifice and a probe introduced into the sinus passes downward towards the rectum rather than up over the sacrum as it does in a pilonidal sinus. Granulation tissue is usually present in the fistula in ano.

In osteomyelitis of the sacrum, the probe will encounter bone rather than end in a blind pouch of soft tissue, as it does in pilonidal sinus. The X-ray is of great value in differentiating between these two lesions.

Quite frequently symptoms referable to an infected pilonidal sinus date from some injury. However, the dimpling and the presence of an epithelial lined sinus will differentiate this condition from a haematoma which has become infected.

A number of these patients have had previous operations, the operation consisting of incision and drainage or incomplete excision of the epithelial lined sinus. Of the sixty-one cases studied by Stone, twenty-five had one or more previous operations. In our own series of cases, thirteen had had previous operation, the greatest number in any one single case being eighteen.

Frequently the lesion is found in two or more members of the same family.

All of the cases which we have seen have been complicated by infection; hence, it has not been our privilege to study the histology of the uncomplicated pilonidal sinus. However, if I may be allowed to quote a paragraph from Stone's article, it will give you the histological picture of a pilonidal sinus which has not become inflamed.

"The lumen of the sinus contained hairs. The inner portion of the wall was of many layers of stratified cuboidal epithelium with only slight cornification adjacent to the lumen, but with imperfect and rudimentary papillar in certain area. Hair follicles were seen and also sweat glands. Outside of the epithelial layer was a dense corium-like sheath, and be-

yond the loose fat and areolar tissue. Some of the sweat glands lie in the fat at quite a distance from the lumen of the sinus. In short, the sinus is a slightly modified imagination of true skin. None of its elements were fully developed, even the characteristic hair is thin, fine and scanty, in pigment, somewhat like lanugo."

The origin of this lesion is not known. Various theories have been offered to explain its occurrence. The earliest theory was that of Warren who considered the lesion to be due to a "reversed hair-follicle." Another theory is that the sinus originates from a remnant of the medullary groove, which is known as the "coccygeal medullary vestige."

It is the view of Dr. G. L. Streeter of the Department of Embryology, Carnegie Institute of Washington, that the histological picture found in this lesion would indicate a down growth of epithelium originating from the true skin. Just why such a down growth of epithelium should occasionally take place in the coccygeal region is not known.

Treatment of pilonidal sinus is surgical. To prevent a recurrence it is necessary to excise the entire epithelial lined tract. If one is so fortunate as to see a case before the lesion has become inflamed, the sinus can be excised and the wound closed. However, the usual case is infected and that means excision with drainage, and that the wound must heal by granulation. Too often the patient comes into your office, or into the hospital, after having been told that the lesion is of no consequence; hence, he is surprised when told that it means wide excision and a granulating wound for several weeks.

It is our practice to make an elliptical incision around the site of the lesion, undercutting the skin, and dissecting downward until the fascia covering the muscular attachments and the sacrum are exposed, then removing in a mass the fatty tissue surrounding the site of the lesion. In following this procedure we have obtained very satisfactory results. However, even with this attempt of radical excision we have had two cases to return to us for another operation.

George Ben Johnston Memorial Clinic.

Dates for the 58th Annual Meeting of the Medical Society of Virginia, in Petersburg, are October 18, 19 and 20, 1927.

PHYSICAL DIAGNOSIS AS A PART OF SOCIAL CASE WORK.*

By BASIL B. JONES, M. D., Richmond, Va.

When a family or an individual calls on a Social Agency for aid, it usually means that the difficulties of living have become so great that they cannot be overcome without assistance. The causes which underlie the various calls for assistance vary with each individual case. Consequently, if treatment is to prove efficacious, it, too, will have to vary according to the indications of the indivdual case.

The best way to render assistance is probably somewhat in accord with the following formula. First, discover the causes. Second, determine if possible the effects on the individuals. Third, try to answer the following questions: What do the clients think about the situation? Do they consider the situation hopeless, or merely an occasion of temporary embarrassment? What is the attitude toward the world or things in general? Incidentally, it is very helpful to know the attitude toward yourself. If it is hostile, your best endeavors may be futile. If they look upon you as a friend who has their best interest at heart, often a great deal can be done.

As I see it, the aim of the Social Worker should be to help individuals get back to a self-supporting basis as soon as possible. In order to accomplish this end, it is of course important to avoid pauperizing or coddling operable cases. Your efforts should be directed toward building up self-reliance in your clients.

As a final admonition, it must be recognized that some cases are inoperable by your technic. Clients with whom you cannot deal constructively should be transferred without too much delay to the proper hands.

Physical defects and ill health often figure prominently as causative factors in social inadequacies, and frequently make up a large part of a vicious circle. For example, a man's health becomes poor, his poor health interferes with his work, and he may lose his job because of this. The resulting poverty and mental distress not only interfere seriously with this man's social adjustment but also tend further to undermine his health. It is obvious that in such cases the physical ailment must be corrected if constructive work is to be done. In this connection let me urge you not to rely on hearsay diagnosis, or on your own personal as-

*From the Pediatric Department of the Children's Memorial Clinic, Richmond, Va. Read before the Virginia Conference of Social Workers.

sumptions. It is essential that you have your client examined by a physician if you are to do your work intelligently. Information obtained from the examining physician will give you a better understanding of your case, and often will give you a plan of procedure which will accomplish definite results. The examination and proper treatment of possible wage earners will often convert a liability into an asset. Examination of the wife will often reveal some condition which could be relieved by appropriate medical treatment. If such treatment is provided, a semi-invalid often may be converted into a happier and more efficient person, and many of the complexities of your job will be solved. Frail or sickly children often constitute a large problem of immediate concern. When the children are sick, the household is disturbed, and, in addition, there is the added expense and fatigue, which constitute a definite drain on the over-burdened parents. Acutely ill children demand attention; the malnourished, frail, child is often overlooked. If you would build for the future, it is important to remember that children often offer the best opportunity for constructive work. Many illnesses and much bad health can be prevented, and most children can be given stronger bodies and better health if properly handled and fed. For your guidance in this important part of your job, advice from the physician is essential.

A complete medical examination consists of three distinct parts: the history, the physical examination, and enough laboratory work to clear up questions not already solved. In a large series of cases a study was once made to determine which part of the medical examination was the most important. In this study it was found that in about 75 per cent of the cases where a diagnosis could be made, the history was either strongly suggestive of the diagnosis or essential for the proper treatment.

My experience at the Children's Memorial Clinic has shown me that it is not only valuable to the physician but also to the social worker, for the worker to take the medical history of the patient before she brings the child to the Clinic. Where history blanks are available, the question should be filled out by the social worker in such a way as to picture clearly the medical background of the patient. For example, instead of answering the question, "Has the child had measles", with a simple, "Yes"; give enough information to show what occurred, e. g., "Yes—1924, mild", or "Yes—1924—complicated by abscessed ears and pneumonia. Convalescence slow—Mother thinks child's present trouble dates from this illness". Generally the patient's own description of symptoms should be given, and in quotation marks if indicated. The history also should contain the details of diet and the daily mode of living. The statement of facts is of far greater value to the physician than personal summaries or interpretations. For the purpose of illustrating the role of physical diagnosis in social case work, I have selected a family that I know well.

The Brown Family

This family consists of seven individuals. Mr. Brown is not a robust man. He has a speech defect, and some peculiarity of manner, which suggests a disease of the central nervous system. In addition, he has been bothered for some time by a hernia. He is the type of individual who generally is laid off when work becomes slack. He has never consented to have a complete physical examination. Consequently, we did not know as much about him as we should.

The mother is a frail-looking woman who has had tuberculosis in the past. Apparently this disease is not now active. She has a tumor of some sort that should receive attention. In addition to her frail health, she has been pregnant eight times and has had to take care of all the household duties. It is not surprising that she has felt that she had to keep the younger children in the house most of the time in order to keep her eye on them.

Virginia, nine years old, is 12 per cent under the average weight for her height. She has thirteen carious teeth. Several abscessed teeth have been drawn. She has a heart lesion which probably resulted from numerous infections of her teeth and tonsils. She also has some enlargement of the glands in her chest. This trouble may possibly be tuberculous. In addtion, she wets the bed every night.

Louise, eight years old, is 17 per cent under the average weight for her height. She has several skeletal defects which indicate a previous rickets. She has three carious teeth. Several of her teeth have been removed. She also has a heart lesion. She wets the bed every night.

Mary, six years old, is small for her age, but is not underweight for her height. This apparent evidence of normality may in reality

indicate a slight under-activity of the thyroid gland. She has twelve carious teeth. At the time of the examination she had a pulse rate of 150. Her temperature was 99.8. There was a heart murmur, which, with the other findings, suggested an acute endocarditis. She had several superficial infectious lesions on her skin. She wets the bed every night.

Doris, three years old, is small for her age. She is not underweight for her height. She has two carious teeth. She is slightly anemic. She has several superficial infectious lesions on her skin.

Raymond, twenty months old, is small for his age. He is definitely anemic. He has a slight rickets.

This whole family, but especially the children, illustrate what an inadequate and poorly balanced diet, plus the lack of fresh air and sunshine, will do to impair the efficiency of the human body, and make it a fertile field for disease germs. Fortunately, the children are made of tough fibre—otherwise one of their many illnesses would have carried them off before this—and most if not all can be made useful and fairly strong if handled properly from now on.

If constructive work is to be done in this family, provision must be made for the supply of proper diet and sunshine for all the family. Dental work will have to be provided to take care of the immediate needs. Some of the children will have to have operations for the removal of foci of disease, for example, tonsils. Proper rest and medication must be provided for those ill at present. The physician can easily outline many of the necessary steps to take in rehabilitating this family. It is the duty of the social worker to see that the advice is put into effect. Frequent check-up visits must be made to see that things are going along all right. If it is found that things are not going properly, further consultations with the doctor should be arranged. Neither the doctor nor the social worker, working singly, can accomplish much in this family; working together they might accomplish a great deal.

The Brown family was chosen as an illustration of the necessity for close co-operation between the doctor and the social worker. Fortunately this family is not typical; unfortunately, it is not unique.

1001 *East Clay Street.*

CONCLUSIONS REGARDING RETIREMENT.

The Teacher in the Medical School. The Chief in the Hospital.

By I. S. STONE, M. D., Washington, D. C.

Many of the "born teachers" have passed away and a new type now occupies the arena of the lecture room, laboratory and hospital. Revision of Medical Schools has almost abolished personal or family influence in the selection of a faculty, and standards have been raised that necessitate vast changes in the personnel of our schools.

So far as our chief interest extends at present, we see no necessity for change in the method of selecting teachers or hospital staffs, but recent developments in supervision of the output of our schools, as by the American Medical Association and Association of American Medical Colleges, may bring close scrutiny of this output, with some degree of pressure, upon certain institutions.

Among other matters for serious thought will be the kind of service rendered by instructors, and whether age proves an obstacle to the most efficient teaching. It will doubtless be seen that the productive period in some individuals continues much longer than in others. By reference to the Index Medicus it may readily be seen that the mental activity of some of our prolific authors subsides nearly as the physical frame loses its elasticity,—if we may judge by the number of their contributions which appear in that accurate record. A glance over its pages will show up our contemporaries as well as ourselves.

The "Fixed Period"

Retirement at a fixed period has certain features worthy of consideration. As the position of assistant or associate is sought because an unwritten but definite rule leads to promotion in rank (as from associate to chief of service, with membership on the Medical Board), a fixed period should prevent pressure upon a chief by a younger class, which pressure is intended to remind him that his retirement would be welcome.

To the well-trained man of forty who has shown his ability and fitness for any service in the hospital, the outlook becomes very interesting and he cannot be blamed for entertaining hopes which may afford him an opportunity to gratify his ambition.

Two Suggestions for Future Thought

1st: Should a time limit be set for a teacher or chief,—say for twenty years, more or less?

2nd: Will the chief who prefers to hold his position until health decides for him,—say at seventy, be in a better financial position than if he had retired at fifty-five or sixty, while still in full practice and in a commanding position professionally? In the second instance he would be able to continue his private practice while otherwise his practice would hardly prove renumerative.

Finally, we believe that a vast majority of practitioners will prefer to continue an unlimited and unrestricted practice unless failing health interferes. There are, however, very good reasons why age and infirmity should be anticipated and suitable insurance be carried for this purpose. Many experiments in medical insurance have been tried, as may be seen in the literature. What may eventually be developed in our great medical schools or medical organizations looking toward suitable provision for retirement of teachers, remains for the future to disclose. Perhaps at some distant date, when philanthropists come to realize the value of the altruistic efforts of the Medical Profession looking toward a better, healthier and happier world, due appreciation may be forthcoming.

1618 *Rhode Island Avenue, Northwest.*

Bibliotheca Obstetrica

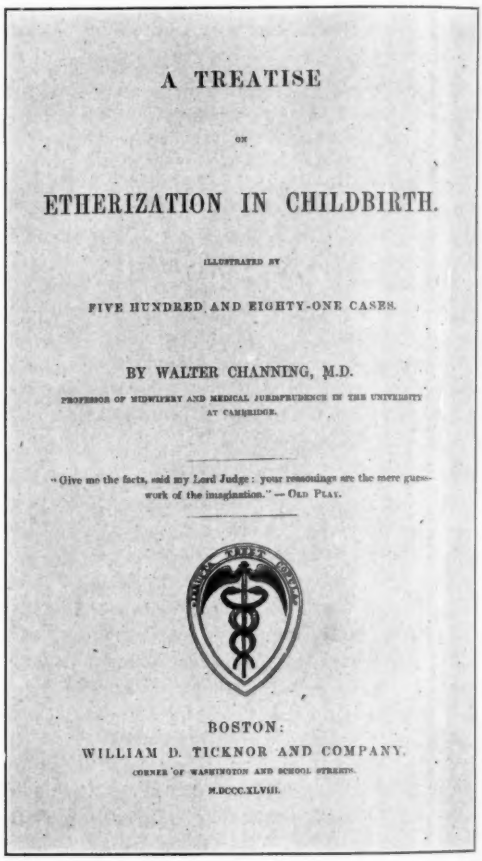
Walter Channing.

Channing (Walter) [1786-1876]. A treatise on etherization in child-birth, illustrated by five hundred and eighty-one cases. viii, 400 pp. 8°. *Boston*, W. D. Ticknor and Co., 1848.

Also, Editor of: New England Medical Review and Journal, 1827.

For Biography, see *Boston M. & S. J.*, 1876, xcv, 237, *also* Cyclopedia of Americal Medical Biography, *Philadelphia*, W. B. Saunders Company, 1912, i, 169.

Dr. Channing was professor of obstetrics and medical jurisprudence in Harvard University (then called the Massachusetts Medical School) and was on the visiting staff of the Massachusetts General Hospital when etherization was introduced into the surgical practice of that institution. He became very much interested in the use of ether in obstetrics and was largely instrumental in popularizing obstetrical anesthesia. In 1848 he was able to collect 581 cases, which he published in detail along with various, and as it seems to us now, whimsical arguments in favor of such practice. In most of the cases a state of analgesia, rather than a state of anesthesia was induced. In forceps deliveries, he recommended that the instruments be applied before etherization. The teaching of the times was that the patient's sensations were an important guide in the proper application of the forceps. By delaying the etherization you did not lose this important guide.



A TREATISE

ON

ETHERIZATION IN CHILDBIRTH.

ILLUSTRATED BY

FIVE HUNDRED AND EIGHTY-ONE CASES.

BY WALTER CHANNING, M.D.

PROFESSOR OF MIDWIFERY AND MEDICAL JURISPRUDENCE IN THE UNIVERSITY AT CAMBRIDGE.

"Give me the facts, said my Lord Judge: your reasonings are the mere guesswork of the imagination." — Old Play.

BOSTON:

WILLIAM D. TICKNOR AND COMPANY.

CORNER OF WASHINGTON AND SCHOOL STREETS.

M.DCCC.XLVIII.

Reproduction of title page of Dr. Channing's "Treatise on Etherization in Childbirth."

Dr. Channing was the grandson of a signer

of the Declaration of Independence, the son of a distinguished Rhode Island attorney, the brother of a noted Unitarian clergyman and the father of a poet. He himself was the first professor of obstetrics in the Harvard Medical School and at one time its dean, an editor of the predecessor of the *Boston Medical and Surgical Journal*, the librarian of the Massachusetts Medical Society, an ardent temperance reformer and a zealous citizen. He was an A. B. of Harvard, graduated in Medicine at the University of Pennsylvania when Dr. Rush was president, continued his medical studies under Dr. James Jackson, of Boston, and at Edinburg University and the London hospitals. He was an honorary fellow of the Obstetrical Society of London. He was a Bible student and a lover of Shakespeare and Scott. He kept fine horses, but was a poor driver. He was very charitable, devoted to the poor and loved to be imposed upon. He died at the age of 90 among his books and grandchildren.

M. P. R.

Correspondence

What Does the Word "American" Stand For?*

Richmond, Va.,
September 7, 1927.

To the Editor:

While the Nation has wrangled spectacularly over the airplane, I have waged a single-handed fight, for the most important of all—health of the men behind our guns. My survey of health conditions in the American Navy which extended half way around the globe, established that the frequent changes in personnel is due, among other things, not only to a shortage of medical and dental officers and nurses, but that we accept untrained physicians, who are engaged in duties which should be executed by clerks. During the fiscal year 1926, more than half of the American navy was on the sick list, which cost upwards of three million dollars. It is unthinkable that, of our personnel of 115,391 officers and men, representing the flower of American manhood for 1926, who should be ready for any emergency, 61,372 of the Nation's defenders lost 1,219,031 days on the sick list. Does this sound like preparedness? What would happen if such a state of affairs existed with submarines, cruisers or airplanes? Isn't the man behind the gun entitled to the same consideration as the ship? If the unearned salaries alone were spent in preventable medicine, it would reduce sickness and save millions of dollars.

I know of nothing more pathetic than to witness an untrained doctor who returns the voiceless sailor to duty with a perfunctory dose of physic, when he should have been placed on the sick list, and in the meantime, the disease advances. The physician of mature training will not enter the Navy, because he can make more money in civil life; besides, he objects to our system, which needs adjustment. Capable doctors are infinitely cheaper than the maintenance of naval hospitals and pensions. Within six years we have invalided 33,140 of our selected risks back to civil life. The approximate shortage of 136 doctors means doctorless ships, which is as disastrous relatively, as gunless battleships. If Navy doctors who are representatives of the American people, as much so as congressmen, were invited to discuss Navy health, there would be less occasion to condemn bureaucracy. The time has come for the American people to know why it is necessary to adorn the streets with recruiting posters, while the industrial plant has a waiting list. If such preventable diseases as tuberculosis were given as much publicity as the Army and Navy football game gets, it would strengthen both national defense and the treasury. If we exhausted the United States Treasury in building cruisers, submarines and airplanes,and then do not exercise our utmost resources in curtailing disease, desertion, dishonorable discharge, pension and death, to a minimum, our naval policy will be unsound.

The Executive Committee, Virginia Department, American Legion, endorsed my survey with a recommendation that I be permitted to address the Naval Affairs Committee at the National Convention which was held in Philadelphia, October, 1926. I read a comprehensive paper before this committee, entitled "The Navy's Human Accountability", which represented massive human disasters, incident to the Nation's selected youths—taken from the official record, not only incontrovertible, but never discussed with the people. The Committee unanimously resolved, that Navy health

*Read before the Resolutions Committee, Virginia Department, American Legion, at Newport News, Va., September 5, 1927.

conditions should be acted upon by the Convention, then in session. The Chairman of the Committee, apparently, deliberatly muzzled the resolution by not bringing it to the attention of the Convention, which has since been recovered from National Headquarters files, by the Virginia Department.

When I tried to get an article in the *American Legion Monthly*, concerning the health of American sailors, it was turned down; whereupon I inquired what it would cost to insert my article as a paid advertisement, and the reply, dated December 28, 1926, recited "the *Monthly* is guided largely by the advice of the chairman of National committees in the absence of specific resolutions adopted by the national conventions of the American Legion or other official action on a given subject. I am enclosing a copy of our advertising rate card. I believe the cost of advertising would be greater than you would wish to bear."

On February 24, 1927, National Commander Howard P. Savage, appointed former Secretary of the Navy, Hon. Edwin P. Denby, the new chairman of naval affairs. All the papers in the case were sent to Mr. Denby, who wrote me on June 27, 1927, in part, "it is not likely that I shall endeavor to get before the Convention your survey or any resolution in regard thereto". The foregoing is a mere summary of the case and conditions. Let it be clearly understood that I am making a specific complaint, as every one should know—that the American Legion as an organization has accomplished great good in the direction of humanity. Our best ships were scrapped—we are not in the league of nations—the Geneva Convention has collapsed—and if our honest to God American doctors are to be muzzled, the job might as well be completed—muzzle the guns. The airplane may have replaced the battleship, but it has not reduced disease or injury. Doctors should deem it a pleasure and a duty to write to their representatives in Congress, in order to have these conditions corrected.

W. Armistead Gills, M. D.,
U. S. Navy (Retired).

The Woman's Auxiliary, composed of the wives, daughters, mothers and sisters of members of the Medical Society of Virginia, is to have a meeting in Petersburg, October 18-20. Information about this may be secured from Mrs. E. F. Truitt, Secretary, Westover Avenue, Norfolk, Virginia.

Woman's Auxiliary, Medical Society of Virginia

To the Doctors.

It is a wonderful privilege you have granted us, the forming of the Woman's Auxiliary to the Medical Society of Virginia, and we want you doctors to know that we desire nothing more than to be asked to do something for the medical profession.

Our efforts are to do for you what you would have us do, as wives and daughters of you wonderful men, who go about constantly all over the state doing your work for humanity. It is our hope that in the years to come we may increasingly serve you as a true Auxiliary.

As the day approaches for the State Medical meeting, it is earnestly desired that the doctors understand more fully what the Auxiliary means to the profession. We are not seeking to place our husbands or friends in office and we know nothing of your politics. We are only what the name implies, an Auxiliary, doing only the work desired of us by the medical profession. Our motto is Service.

The Auxiliary is not a club, but an organization—a reserve force. Each member is connected with one or more social, literary or civic clubs in her community. Every one of these clubs should be persuaded to provide at least one health program during the year. It is the doctor's wife who can do this best.

The aims of the Auxiliary are to supplement and strengthen the work of the medical profession, advancement of health and education along the lines and through the channels best known to women. This is being studied by groups making up the organization in all parts of the country. This work will not accomplish its true mission until every county in Virginia is organized.

Let us seize the opportunity to carry the Message of Health and Education to every part of our state, to every doctor's wife, and thus through an extensive, intensive organization plan reach all other womens' organizations which look to the advancement of health and education.

Each County Medical President has been asked to approve an auxiliary to his County Society, and it was learned that a large number of these County Medical Societies do not meet regularly, sometimes not meeting for as

much as two years, and some counties have no Medical Society. This shows the great need of the Auxiliaries because wherever there is an Auxiliary (meeting at same time and place—but not same room, as the doctors), there is an active Medical Society. Such an Auxiliary, even if there are only three or four members (composed of wives, daughters, mothers and sisters of doctors), can be of great service to the profession, though they do nothing more than hold together the Medical Society. Naturally, if the wife wishes to attend a meeting the husband will make an effort to go and take her there. It is hoped that every doctor will bring a woman member of his family to the State Meeting in Petersburg, October 18th-20th.

You doctors can really be of the utmost help to the Auxiliary. We do need you and we want you to need us, so please call upon us.

The American Medical Association has asked two things of us: It expects the Auxiliary to represent *Hygeia* and place that splendid magazine in the hands of the laity in every home in the State. You can help us by giving the Auxiliary your subscription to *Hygeia*. With the commission derived we place free subscriptions where they will do the most good. So please go over to the booth in Petersburg and take out your subscription, or renewal, a two-year one if you will, or order some for Christmas presents for your friends. Do let the Auxiliary have the credit of your subscription, because your State is way behind others in *Hygeia* work.

The largest problem that has been presented to us by the National Organization has been the request that we put over the idea of the annual, thorough physical examination among our own members. We have really had a bit of difficulty with that, because some of you men have not seemed to want to examine these poor charity patients,—that is all a doctor's wife seems to be. We want you to be as thoroughly imbued with the idea of the thorough physical examination, from now on, as we are. Any of you who happen to have cranky wives, or as we claim, sick wives (we think all wives are good wives, and that if they are cranky wives they are sick), should have them examined, for we need them to work for us. If you do not need them we do. So please have them well and bring them to Petersburg.

You will see by the program sent you that we have planned a very interesting meeting. You are our expected guests. Know this, then, we who are banded together for the purpose of serving the doctors, join in this cordial invitation.

We extend to you an outstretched hand and place ourselves and all we are, at your command.

(Signed) THE OFFICERS OF THE WOMAN'S AUXILIARY TO THE MEDICAL SOCIETY OF VIRGINIA.

The Truth About Medicine

In addition to the articles enumerated in our letter of July 30th, the following have been accepted:

Abbott Laboratories
- Acetarsone
- Amiodoxyl Benzoate—Abbott.
- Ephedrine Sulphate—Abbott.

H. K. Mulford Co.
- Diphtheria Toxin—Antitoxin Mixture, New Formula, Park-Banzhaf's 0.1 L+.
- Erysipelas Streptococcus Antitoxin (concentrated) —Mulford.

Non-proprietary Articles
- Amiodoxyl Benzoate.

NEW AND NON-OFFICIAL REMEDIES

Diphtheria Toxin-Antitoxin Mixture, New Formula, Park-Banzhaf's 0.1 L+ (New and Non-official Remedies, 1927, p. 341).—This product is also marketed in packages of one 10 c.c. vial, representing three immunizing treatments. H. K. Mulford Co., Philadelphia. (Jour. A. M. A., August 20, 1927, p. 600).

PROPAGANDA FOR REFORM

Plasmochin.—The Council on Pharmacy and Chemistry issues a preliminary report on "Plasmochin," a synthetic quinoline derivative, developed in Germany and proposed for use in the treatment of malaria. For many years attempts have been made to find a substitute for quinine that would be cheaper, less bitter, less toxic and more specific than quinine. Plasmochin appears to be a step forward in this search, though it is not a full solution of the problem of eradicating malaria. It is said to act by destroying some of the forms of the malarial parasite and by inhibiting the development of others. Those who have studied the drug appear to agree that the new drug is most effective on the quartan forms of malarial parasite, that in tertian malaria a combination of the new drug with quinine is more effective, and that in birds the drug is sixty times more effective than quinine. The Council points out that results derived from the study of bird malaria have chiefly a suggestive value, and that further clinical study must be made before any optimistic estimate of its value in human beings can be formed. The Winthrop Chemical Co. has imported the drug for clinical trial and this is labelled to be "ethylaminoquinoline tannate." The firm states that the product when placed on the market in this country will be manufactured here. The Council has postponed further consideration of Plasmochin until clinical evidence concerning the

efficacy, safety, and dosage of the product is available. (Jour. A. M. A., July 9, 1927, p. 113).

Limitations of Goiter Prophylaxis.—Government authorities believe that there is no reason for special goiter prevention measures on the part of the state and local health departments. They do not see any necessity for universal prophylaxis such as may be attained by iodization of table salt or municipal water supplies. There is a growing opinion that the administration of iodine as a means of preventing goiter should be under the guidance of physicians and should be individualistic. In this way much good may be accomplished. (Jour. A. M. A., July 9, 1927, p. 114).

Vaccination of the New-born Against Tuberculosis with Bacillus Calmette Guérin.—The history of the vaccination of new-born infants against tuberculosis with Bacillus Calmette Guérin (abbreviated B. C. G.) since July 1, 1924, in France, and other countries over a period of two and one-half years, to January 1, 1927, has just been reviewed by Professor Calmette with his co-workers Guérin, Nègre and A. Boquet, at the Pasteur Institute in Paris. The vaccine is a living tubercle bacillus of bovine origin rendered avirulent for all animals by 230 passages on bovine bile medium. For the preparation of the vaccine, the B. C. G. organism is transferred from the bile medium to a synthetic medium, cultured, and an emulsion of bacilli prepared. Two c.c. of the finished preparation constitutes a dose to be fed to an infant in milk. Three doses are given. A total of 43,283 children have been thus vaccinated. The various papers which are reviewed may be said to represent the culmination of the life work of a revered scientist. They may open a new era in the eradication of tuberculosis and in the knowledge of its epidemiology. For the United States, however, and for all countries it would seem wise to hold in check uncontrolled enthusiasm for its use until those charged with the responsibility of safeguarding the public have carefully proved that the method and the premises are sound. (Jour. A. M. A., July 9, 1927, p. 115).

Cactina Pillets Again.—Twenty years ago preparations of *Cactus grandiflorus*—the Mexican night-blooming cereus—had considerable vogue, chiefly because of the extravagant advertising claims made for two preparatons said to be derived from it—"Cactin" and "Cactina." In 1908, Sollmann thus ironically described the claims made for these preparations: "Should the heart be too slow, cactus quickens it; if the heart is too fast, cactus slows it; should the heart be too weak, cactus strengthens it; if the heart is too strong, cactus weakens it; does the heart wobble, cactus steadies it; if the heart is normal, cactus does not meddle with it." Subsequently a number of reports were published showing pharmacologically and clinically that preparations of cactus were inert. As a result of the thorough exposure of the worthlessness of cactus preparations, proprietary houses have generally abandoned their exploitation. While 'Cactin" (now called "Cactoid") is still offered for sale and is still the "joker" in a proprietary morphine-scopolamine preparation, no claims for it are advanced. In the case of "Cactina Pillets," however, the proprietor—the Sultan Drug Co.—still finds it profitable to continue advertising in a certain class of so-called medical journals and to continue making the claims that have been so thoroughly disproved. To those who give credence to these advertising claims, a recent clinical study will be of interest: it reaches the conclusion that Cactina Pillets are no more than a placebo, thus agreeing with Sollmann, who twenty years ago called the preparation a psychic cardiac tonic. (Jour. A. M. A., July 9, 1927, p. 138).

Bismarsen.—The Council on Pharmacy and Chemistry publishes a preliminary report on Bismarsen, the name given by the Abbott Laboratories to a new derivative of arsphenamine containing bismuth and proposed for use intramuscularly in the treatment of syphilis. Bismarsen is the sodium salt of a bismuth derivative of arsphenamine methylene sulphonic acid, the exact structural formula of which has not been established. The Council reviews a report of clinical trials made by Drs. Stokes and Chambers and of a study made for the Council. The Council finds that the available evidence is insufficient to permit the acceptance of the drug for New and Non-official Remedies; however, the generally favorable character of the reports together with the fact that Bismarsen is a chemical substance of controlled composition is sufficient to warrant its further trial by physicians with due recognition of the fact that the drug is still in the experimental stage. For the information of those who desire to use this compound, the Council publishes a description of the chemical properties, the actions, uses and dosage of the drug. (Jour. A. M. A., July 16, 1927, p. 204).

Radithor.—This is one of the numerous pieces of quackery in the field of radioactivity. It is exploited by the Bailey Radium Laboratories of East Orange, N. J., the moving spirit of which is one William J. A. Bailey. The Radithor quackery consists of thirty half-ounce bottles of distilled water, which is alleged to be radioactive. No less than thirty bottles can be purchased; and the price is $30. That is, the price to the sucker who happens to be a layman is $30; to the easy mark who can write M. D. after his name, it is $25. An order from "-------- for Doctors' Use Only" states that "when patient buys direct, we allow doctor a $5 credit on all orders." The physician who would order Radithor must be weak not only in medicine but also in morals. (Jour. A. M. A., July 16, 1927, p. 208).

"Viscose" for Varicose Veins.—The Viscose Company, Los Angeles, California, sells a small amount of a glue mixture with a few rolls of gauze bandages for $30. This combination is sold as a means of reducing varicose veins. Apparently, the Viscose Company also gives medical treatment to those who will come to its headquarters. The treatment consists of the mixture "Viscose," which is melted, applied to the leg and covered with gauze; more "Viscose" and gauze are applied and finally all covered with a paper bandage. An analysis of "Viscose" in the A. M. A. Chemical Laboratory showed it to be essentially a mixture of zinc oxide and glycerin in a gelatine base. The Laboratory pointed out that the name is misleading, as Viscose is a well recognized chemical substance. (Jour. A. M. A., July 16, 1927, p. 225).

The Joy Beans Laboratories Fraud.—One Frank Beland, of Cairo, Illinois, exploited an indecent piece of quackery under such trade name as "Joy Beans Laboratories" and "Beland Laboratories," selling a preparation called "Joy Beans" as a sexual tonic. Beland had no medical or professional training; his nostrum was put up for him by Eli Lilly and Company, Indianapolis. Beland's exploitation of this aphrodisiac was found fraudulent by the post office authorities and was barred from the use of the mails. (Jour. A. M. A., July 16, 1927, p. 225).

Pancreols.—In the advertising of the Drug Products Co., Inc., Pancreols (formerly called Insulols), are claimed to be rectal suppositories "Containing

Specially Prepared Desiccated Pancreatic Hormone-bearing Substance Containing the Active Principle of the Islands of Langerhans." In effect this preparation offers insulin for rectal administration. Scientific evidence has not been offered for the value of this product. The rectal administration of insulin has been found of little or no value, as compared to the subcutaneous route, against glycemia, glycosuria or acidosis. The rectal administration of insulin belongs to the class of methods which are "either mechanically difficult, inconclusive, inconstant, or wasteful of the drug." No preparation of the Drug Products Co., Inc., has been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Non-official Remedies. A number of this firm's products have been reported on unfavorably, namely: Pulvoids Calcylates, Pulvoids Calcylates Compound, and Pulvoids Natrium Compound. (Jour. A. M. A., July 16, 1927, p. 229).

Koch Cancer Foundation.—On September 22 and 23, according to an announcement just issued, the second annual convention of the Koch Cancer Foundation will take place in Chicago, one of the meetings being a joint session with the American Association for Medico-Physical Research. The American Association for Medico-Physical Research was organized in 1911 by the outstanding quack of the century, Albert Abrams. It is stated that some three hundred physicians will gather to discuss the use of the Koch remedy in cancer. But one meeting is to be a joint meeting with the distinguished members of the American Association for Medico-Physical Research. The Koch representatives should add tone to this remarkable assemblage. (Jour. A. M. A., July 23, 1927, p. 296).

More Misbranded Nostrums.—The following products have been the subject of prosecution by the federal authorities charged with the enforcement of the Food and Drugs Act: Vitona (Vitona Mineral Ore Co.), consisting of a crude silicate ore containing iron sulphate, free sulphur and charcoal, with traces of calcium, magnesium and aluminum sulphate. McMichael's Allgland with Radium (Carnotite Gland Extract Company), tablets containing 91 per cent of milk sugar, together with talc, a trace of nitrogenous organic matter and a faint trace of radium. Allfood with Radium (Allfood Laboratories), consisting of about 86 per cent milk sugar and 14 per cent of material insoluble in water, comprising mainly talc, mineral matter, and a small amount of animal glandular tissue. Each tablet contained about 0.09 millimicrograms of radium. Brooten's Kelp Ore and Brooten's Kelp Ore Liquid (Kelp Ore Remedies Corporation). The first was found to be a shale-like clay containing iron and aluminum sulphates, and a trace of sulphur, while the "Liquid" was a water solution of iron and aluminum sulphates, with traces of calcium, magnesium and potassium salts. (Jour. A. M. A., July 23, 1927, p. 310).

Cultures of Lactic Acid Producing Organisms.—Pseudoscientific promotion of lactic acid producing bacteria has become familiar, and in some instances it approaches outspoken quackery. The Council on Pharmacy and Chemistry of the American Medical Association has attempted from time to time to issue conservative, tolerant statements regarding the status of the uncertain lactic acid bacillus therapy. Furthermore, it has endeavored to establish the conditions under which alone, if at all, actual implantation effects can be expected. Thus, acidophilus milk and broth cultures and concentrates of *B. acidophilus* are not considered acceptable unless the number of viable organisms contained in a stated quantity is clearly stated, and the broth cultures and concentrates are made to indicate the need of the coincident administration of carbohydrates. The wisdom of the Council's cautions is indicated by the recent investigations of James in the microbiologic laboratory of the Bureau of Chemistry, U. S. Department of Agriculture. This survey of a number of marketed preparations indicated that samples representing cultures of both *B. acidophilus* and *B. bulgaricus* are not infrequently worthless. As was anticipated, the milks showed the highest average counts, the whey cultures next to the highest, and the solid cultures the lowest. (Jour. A. M. A., July 30, 1927, p. 374).

Foods in Diabetes.—A generation ago the chief concern in the management of diabetes was centered in the reduction of the carbohydrate intake; consequently, in the choice of articles of diet preference was given to those relatively poor in sugars and starches. The expression "diabetic food" came into vogue to designate a variety of products, having in common a content of carbohydrate notably below that of ordinary products of the same class. An official definition was formulated by governmental authority, permitting the application of the term diabetic to indicate that a food contains "not more than half as much glycogenic carbohydrates as the normal food of the same class." The outlook on the dietotherapy of diabetes has been considerably altered in more recent years. It is no longer merely the carbohydrate in the food that merits attention. Sugar can be formed from protein. Regulatory officials have become inclined to discourage the use of the term diabetic as a part of the name of these special foods. Accordingly there is no longer any federal definition of a diabetic food. Since such products are offered as dietetic aids in the control or mitigation of disease, they are regarded by food control officials as therapeutic agents rather than as foods and more properly regulated under the provisions of the Food and Drugs Act, which refer to drugs. E. M. Bailey, the chemist of the Connecticut Agricultural Experiment Station, has also abandoned the term "diabetic food." In his latest report he remarks that successful diets for patients with diabetes may be formulated by proper selection of common foods quite as well as by the use of special foods. He states that many of the latter serve useful purposes but are expensive. The utilization of common foods is of increasing interest to the physician and to the patient. (Jour. A. M. A., July 30, 1927, p. 376).

More Misbranded Nostrums.—The following products have been the subject of prosecution by the federal authorities charged with the enforcement of the Food and Drugs Act: Sexvitor (Joseph A. Piuma), tablets consisting essentially of strychnine, a phosphorus compound, a laxative plant drug extract, and some animal matter. Rider's Eucalyptus Oil Compound (Dr. G. H. Rider Company), essentially petroleum oil flavored with sassafras. Moore's Liver-Ax (The Mount Grove Grocery Company), an extract of laxative plant drugs in a mixture of water and alcohol. Genitol (Brewer and Company, Inc.), containing 18 per cent alcohol, about 2 per cent mineral matter, sugar and glycerin. Nervo-Vital (Brewer and Company, Inc.), consisting of alcohol, glycerin, sugar, mineral matter, and a small amount of strychnine and nitrogenous matter, together with some water. (Jour. A. M. A., July 30, 1927, p. 390).

Colloidal Kaolin in Intestinal Toxemia.—Suspensions of colloidal kaolin are of little or no use in the treatment of intestinal toxemias. Colloidal kaolin chiefly adsorbs basic substance from acid

mediums. Alkaline fluid liberates the basic substance from its adsorption compound. Hence much adsorption in the alkaline intestine could hardly be expected. In practice, colloidal kaolin has been disappointing. (Jour. A. M. A., July 30, 1927, p. 393).

Ethylene—II.—The A. M. A. Chemical Laboratory reports another examination of the quality of ethylene for anesthesia which is on the market. The Laboratory reports on the composition of "Ethylene for Anesthesia" of the Certified Laboratory Products (which has been accepted for New and Non-official Remedies), and a specimen of the ethylene of the Kansas City Oxygen Gas Company, the quality of which had been questioned in a hospital. The laboratory found both products to meet the requirements of New and Non-official Remedies. The Laboratory repeats its previous recommendation, that physicians use only the brands of ethylene described in New and Non-official Remedies. (Jour. A. M. A., August 6, 1927, p. 451.)

J. M. Harris—Quack.—James S. Harris, Tulsa, Oklahoma, has for some years been quacking it in the "cancer cure" line, selling "Radium Oil." The Supreme Court of Oklahoma has recently affirmed the judgment of the trial court that had awarded a woman ten thousand dollars damages because Harris had treated what at the outset was an operable case of cancer of the breast and allowed the matter to progress until it became inoperable. (Jour. A. M. A., August 6, 1927, p. 468).

Book Announcements

Manual of the Diseases of the Eye. For Students and General Practit oners. By CHARLES H. MAY, M. D., Director and Visiting Surgeon, Eye Service, Bellevue Hospital, New York, 1916 to 1926; Consulting Ophthalmologist to the Mt. Sinai Hospital, the French Hospital, and the Italian Hospital, New York, etc. Twelfth Edition, Revised. New York. William Wood and Company. 1927. 8vo. of 445 pages, with 374 original illustrations, including 23 plates, with 73 colored figures. Cloth. Price, $4.00.

Minor Surgery. By ARTHUR E. HERTZLER, M. D., F. A. C. S., Chief Surgeon, Halstead Hospital, and VICTOR E. CHESKY, M. D., F. A. C. S., Chief Resident Surgeon, Halstead Hospital. St. Louis. C. V. Mosby Company. 1927. 8vo. of 568 pages, with 438 illustrations. Cloth. Price, $10.00.

Emergencies of a General Practice. By the late NATHAN CLARK MORSE, M. D., F. A. C. S. Revised and Rewritten by AMOS WATSON COLCORD, M. D., Surgeon, Carnegie Steel Co.; Ex-President, Association of Railway Surgeons, Pennsylvania Lines East, etc. Second Edition. St. Louis. C. V. Mosby Company. 1927. 8vo. of 541 pages. Cloth. Price, $10.00.

Gonococcal Infection in the Male. By ABR. L. WOLBARST, M. D., Urologist and Director of Urologic Clinics, Beth Israel Hospital, etc., with a Chapter Written by J. E. R. McDONAGH, F. R. C. S., Late Hunterian Professor, Royal College of Surgeons, etc., London, England. 8vo. of 237 pages, with 89 illustrations, including 7 color plates. St. Louis. C. V. Mosby Company. 1927. Cloth. Price, $5.50.

Physical Diagnosis. By RICHARD C. CABOT, M. D., Professor of Medicine in Harvard University; Formerly Chief of the West Medical Service at the Massachusetts General Hospital. Ninth Edition. Revised and Enlarged. 8vo. of 536 pages with 6 plates and 279 figures in the text. New York. William Wood and Company. 1927. Cloth. Price, $5.00.

Potassium and Tartrates. A Review of the Literature on Their Physiological Effects. By RALPH W. WEBSTER, Ph. D., M. D., Professor of Medical Jurisprudence in University of Chicago (Rush Medical College), Chicago; Director of Chicago Laboratory; with **A Digest and Bibliography of the Literature.** By W. A. BRENNAN, A. B. Published by the Commonwealth Press, Chicago. 1927. 12mo. of 168 pages. Cloth. Price, $2.50 net.

The Truth About Baking Power. Sworn Scientific Testimony and Government Exhibits from Records in Docket No. 540. Federal Trade Commission, Washington, D. C. Compiled and Distributed by Calumet Baking Powder Company. 172 pages. Paper.

Fistula of the Anus and Rectum. By CHARLES JOHN DRUECK, M. D., F. A. C. S., Professor of Rectal Diseases, Post-Graduate Hospital and Medical School, Chicago. Philadelphia. F. A. Davis Company, Publishers. 1927. 8vo. of 318 pages with 66 original illustrations. Cloth. Price, $3.50 net.

Surgical Diseases of the Gall-Bladder, Liver and Pancreas and Their Treatment. By MOSES BEHREND, M. D., F. A. C. S., Attending Surgeon to the Jewish and Mt. Sinai and Northern Liberties Hospitals; Instructor in Anatomy at the Jefferson Medical College. 8vo. of 278 pages, with numerous illustrations, some in colors, including many full page plates. Philadelphia. F. A. Davis Company, Publishers. 1927. Cloth. Price, $4.00 net.

Cream of Tartar and Tartaric Acid. By MARIAN JANE PARKER, 4100 Fillmore Street, Chicago, Ill. Pamphlet of 20 pages. Paper.

Feeding and the Nutritional Disorders in Infancy and Childhood. By JULIUS H. HESS, M. D., Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine; Member Advisory Board, Children's Bureau, Department of Labor, Washington, D. C. 8vo. of 566 pages. Illustrated with 45 engravings in the text and one full-page colored plate. FIFTH REVISED AND ENLARGED EDITION. Philadelphia. F. A. Davis Company, Publisher. 1927. Cloth. Price, $4.50 net.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on various phases of Medicine, Surgery and the Specialties. By Leading Members of the Medical Profession Throughout the World. Edited by HENRY W. CATTELL, M. D., Philadelphia, with Collaborators. Volume III. Thirty-Seventh Series, 1927. Philadelphia and London. J. B. Lippincott Company. 1927. 8vo. of 311 pages. Cloth.

Cancer Control. Report of an International Symposium Held Under the Auspices of the AMERICAN SOCIETY FOR THE CONTROL OF CANCER. Lake Mohonk,, New York, U. S. A., September 20-24, 1926. The Surgical Publishing Company of Chicago, 1927. Large 8vo. of 336 pages. Cloth.

Virginia Medical Monthly

FOUNDED BY LANDON B. EDWARDS, M. D., APRIL, 1874.
OWNED BY THE MEDICAL SOCIETY OF VIRGINIA.
PUBLISHED BY THE PUBLISHING COMMITTEE.

A. G. BROWN, Jr., M. D., Chairman, Richmond, Va.

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AGNES V. EDWARDS, Business Manager and Secretary-Treasurer.

All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Journal.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: $2.00 per annum in advance.
Single Copies 20c.

Vol. 54 OCTOBER, 1927 No. 7

Editorial

Carcinoma of the Pancreas.

Kiefer[1] has recently presented this subject. His paper is based upon a review of the literature, report of cases from Peter Bent Brigham Hospital, and a general consideration of the diseases.

While this disease has been known and written of since 1836 there is not an extensive literature on this subject. The rarity of the condition may be judged by the following figures from post mortem examination: 127 in 11,472 post mortems in Milan; 226 cases in 53,000 autopsies reported by Roswell Park; Bashford reported 1,000 cases in 84,448 autopsies. Futcher reported that of 41,949 patients admitted to the medical wards of the Johns Hopkins Hospital there were fifty-eight cases diagnosed as carcinoma of the pancreas; while of 50,494 patients admitted to Peter Bent Brigham there were diagnosed fifty-nine cases. This gives one an idea of the incidence of this disease.

It may be interesting to review briefly symptoms of this condition as pointed out by Kiefer.

Symptoms

Cachexia: This should be regarded as a sign of advanced malignancy. It is a late symptom. In other words, cachexia may be recognized after the process has reached a stage approaching termination. In the Kiefer cases twenty-nine out of thirty-three cachexia were observed. This symptom seemed to be extreme. The size of growth as brought out by physical examination seemed small as compared to what would be taken to be a size sufficient to produce such cachexia. This status was explained by the obstructive effect upon outflow of bile and pancreatic secretion. Both obstructive jaundice and deficient digestion tend to a cachexia. The "ill-habit" appearance is further emphasized by loss of weight. Loss of weight was noted in twenty-eight out of thirty cases. This symptom was important as it was a symptom first noted by twenty-two out of the thirty-three patients. A rather sudden loss of weight from one's usual weight excites interest on the part of the patient. Every sudden loss of weight may be taken to be important enough to warrant thorough investigation. The average loss of weight in the series was twenty-eight pounds; one patient lost fifty pounds. The rate of loss is rapid: in one case there was a loss of forty-one pounds in six weeks. In this cachexic group of symptoms, loss of appetite was found in twenty cases. This was particularly evident in those patients who were jaundiced. There was marked sense of weakness associated with the symptoms. Twenty-one of the patients expressed the complaint of loss of strength.

Jaundice: Jaundice is also a late symptom. It is brought about by obstruction of the common bile duct. The degree is extreme. It is not intermittent, it is progressive; it may assume that intensity known as "black jaundice". Obstruction by gall-stones is usually more or less intermittent. This type of jaundice varies usually. The impaction may relax from time to time. In this way some release of bile will occur. This mechanical situation is brought about by the fact of relative positions of the common bile duct and the head of the pancreas. In 60 per cent of normal people the bile duct at its lower end is completely surrounded by the head of the pancreas; while in the remaining 40 per cent the bile duct lies in a groove between the pancreas and duodenum. From this position bile block is brought about by pressure or metastasis.

Pain: Pain is always an important symptom. In twenty-one of the thirty-three cases of this series, pain was a prominent symptom. It was the first symptom in four and the second in three patients.

Much attention should be paid to complaints of pain in the epigastrium. Patients with cancer of the pancreas have, according to our

1. Archives of Internal Medicine, Vol. 40, No. 1.

author, three general types of pain. One patient may have one or all at one time:

(1) A steady, dull, severe mid-epigastric pain. This radiates to the lower part of the back.

(2) A paroxysmal severe pain. This begins near the umbilicus and radiates to the back and the front part of the chest.

(3) A colicky pain in the right hypochondrium. This sometimes radiates to the right sub-scapular region. In this, it resembles pain of hepatic colic.

The study of pain in the upper abdomen, too often thought to be mere pains of indigestion, may be the most profitable means of bringing out a diagnosis at an early moment. X-ray examination supplementing physical examinations combine in offering the best method of reaching an understanding of the cause of persistent pain in the region. Exploratory operation, a more risky method, with attendant dangers, immediate and subsequent, is also a method, for study of this important sign of epigastric pain.

Nausea and Vomiting: Nausea with or without vomiting was noted by Kiefer in twenty of his series. This stomach syndrome occurs, because of (1) the suppression of bile and pancreatic secretion; (2) metastatic pathology; (3) obstruction and stomach misfunctions. This is another common symptom-association, nausea and vomiting, which should be carefully run down to its origin, if possible. Patients suffering from nausea and gastric distress should be carefully examined by X-ray and stomach test, besides physically. The most evasive, but yet very significant symptom emanating from the stomach is epigastric distress—persistent dyspepsia, as often spoken of by patients. Oppression, heartburn, pyrosis, constriction in epigastrium and substernum, are a group of important sensations which are abnormal and which require interpretation. An early investigation of these symptoms is a strategic move in diagnosis.

Edema—Ascites—Haematuria: A little comment on these signs is pertinent here. Edema of legs in ten; free fluid in abdomen in three; haematuria as a chief complaint in one case, are notations of Kiefer in his thirty-three cases.

Physical Signs

Emaciation in twenty-four; jaundice in twenty-three; pigmentation of skin were noted in inspections.

Liver: Liver was enlarged in fifteen, although easily felt in twenty-six of these cases. This enlargement is due to the bile block and metastasis, occasionally associated.

Gall-Bladder: Infection of the gall-bladder is a common association. Gall-stones are frequently found. Previous operation for gall-stones is not infrequent. In Kiefer's series, a dilated gall-bladder was felt in fifteen of the twenty-three jaundiced cases. A palpable gall-bladder in jaundice is a frequent association in carcinoma of the pancreas. Bard and Pic, and Futcher are quoted to show this. In the examination of a dilated gall-bladder, it is found to be a hard, rounded, smooth mass, about the size of an egg, usually situated in the right upper quadrant, "distinct from and below the lower edge and descending with inspiration."

Tumor: Carcinoma of the pancreas is characterized by a hard, irregular mass formation not large, lying in mid-epigastrium, sometimes in either hypochondrium. It may move without respiratory movement. If it lies over the aorta, pulsations are transmitted. It is tender but not painful.

Peripheral glands enlargement, dilated veins, intestinal obstruction, edema, ascites, hydrops of pleural sacs, are a few signs observed in this series.

Laboratory Evidence: Glycosuria is commonly associated, although true diabetes appears to be rare. Glycosuria is intermittent. A quotation from Joslin notes than in 5,121 cases of diabetes, cancer of the pancreas was diagnosed only in thirteen instances.

Blood disturbances are leucocytosis and anemia. In fifteen of fifty-three cases a count of over 10,000 leucocytes was made, while in nine of twenty-one cases, less than four million erythrocytes were noted. In jaundice, blood serum is highly colored.

Stools showed absence of bile in twenty-three cases; occult blood was present in ten of twenty-seven patients. Fat was determined in seven cases. Food fat is lost in stools in large amount. Roentgen ray examination is held by Kiefer as of little positive value. It is of value, however, in ruling out cancer of the gastro-intestinal tract proper. Where the tumor mass displaces normal lines by pressure or adhesions, this inference may be made.

Duration: The duration of life varies. According to a quotation from Bard and Pic, duration of life after onset of the symptoms

is from six to seven months; Marillie, four to five months; Parmentier and Chabral, four to seven months. Keifer's series showed an average life of four and three-tenths months.

News Notes

All Aboard for Petersburg!

All roads for Virginia doctors should lead to Petersburg, October 18, 19 and 20, for the fifty-eighth annual meeting of the Medical Society of Virginia to be held in that city. The programs sent each member, recently, show much of interest scientifically as well as socially. Our invited guests will be featured on Tuesday and Wednesday evenings.

Several affiliated societies and alumni meetings will be held in the form of luncheon or dinner meetings. Indications are there will be a a large attendance, and each component society is urged to have representation in the House of Delegates. The first meeting of this body is to be held on Tuesday, October the 18th, at 4 P. M., in the Petersburg High School, for the purpose of disposing of as much business as possible prior to the scientific sessions.

This list of delegates whose names have been sent this office to time of going to press are as follows:

ALBEMARLE—Dr. M. L. Rea, Charlottesville, *delegate.*

ALEXANDRIA CITY—Dr. G. T. Klipstein, Alexandria, *delegate;* Dr. P. B. Pullman, Alexandria, *alternate.*

ALLEGHANY-BATH—*Alleghany County*, Dr. B. R. Hudnall, Covington, *delegate;* Dr. I. T. Hornbarger, Hot Springs, *alternate.*

Bath County—Dr. Edgar A. Pole, Hot Springs, *delegate;* Dr. J. W. Wallace, Covington, *alternate.*

AMELIA—Dr. James L. Hamner, Mannboro, *delegate.*

ARLINGTON—Dr. R. N. Sutton, Clarendon, *delegate;* Dr. W. C. Welburn, Ballston, *alternate.*

BOTETOURT—Dr. M. T. McCulloch, Troutville, *delegate;* Dr. R. T. Givens, Glen Wilton, *alternate.*

FAIRFAX—Dr. Wm. Meyer, Herndon, *delegate;* Dr. F. M. Brooks, Fairfax Station, *alternate.*

FLOYD—Dr. J. L. Harvey, Simpsons, *delegate.*

FREDERICKSBURG—Dr. Frank C. Pratt, Fredericksburg, *delegate;* Dr. T. Welch Dew, Fredericksburg, *alternate.*

HALIFAX—Dr. S. T. A. Kent, Ingram, *delegate;* Dr. R. H. Fuller, South Boston, *alternate.*

LEE—Dr. P. D. Pence, St. Charles, *delegate:* Dr. C. C. Pearce, Pennington Gap, *alternate.*

MID-TIDEWATER—*Gloucester*—Dr. Jas. W. Smith, Hayes Store, *delegate.*

King William—Dr. A. W. Lewis, Ayletts, *delegate.*

King and Queen—Dr. R. D. Bates, Newtown, *delegate.*

Middlesex—Dr. W. P. Jones, Urbanna, *delegate.*

Essex—Dr. E. L. W. Ferry, Millers Tavern, *delegate.*

York—Dr. L. O. Powell, Seaford, *delegate.*

Mathews—Dr. R. R. Hoskins, Mathews, *delegate.*

NANSEMOND—Dr. J. L. Rawls, Suffolk, *delegate;* Dr. G. R. Joyner, Suffolk, *alternate.*

NELSON—Dr. B. F. Randolph, Arrington, *delegate;* Dr. E. C. Kidd, Lovingston, *alternate.*

NORFOLK—*Delegates*, Dr. N. G. Wilson, Dr. J. Warren White, Dr. P. St. L. Moncure, and Dr. Julian L. Rawls, all of Norfolk.

PATRICK-HENRY—*Patrick*—Dr. J. T. Shelburne, Critz, *delegate.*

Henry—Dr. J. L. Blanton, Fieldale, *delegate.*

PITTYLVANIA-DANVILLE—Dr. I. C. Harrison, Danville, *delegate;* Dr. P. W. Miles, Danville, *alternate.*

POST-GRADUATE OF SOUTHERN VIRGINIA—*Nottoway*—Dr. J. A. Lowry, Crewe, *delegate;* Dr. C. C. Tucker, Blackstone, *alternate.*

Dinwiddie—Dr. Wright Clarkson, Petersburg, *delegate;* Dr. Geo. H. Reese, Petersburg, *alternate.*

Prince George—Dr. D. L. Elder, Hopewell, *delegate;* Dr. J. M. Bailey, Hopewell, *alternate.*

Greenesville—Dr. B. J. Atkinson, N. Emporia, *delegate;* Dr. G. M. Naff, N. Emporia, *alternate.*

Brunswick—Dr. W. C. Harman, Dolphin, *delegate;* Dr. W. H. Lewis, Lawrenceville, *alternate.*

Surry—Dr. J. H. Parker, Dendron, *delegate;* Dr. W. W. Seward, Surry, *alternate.*

Sussex—Dr. Joel Crawford, Yale, *delegate;* Dr. T. M. Raines, Wakefield, *alternate.*

POWHATAN—Dr. R. D. Tucker, Powhatan, *delegate;* Dr. J. E. Tilman, Rock Castle, *alternate.*

RICHMOND ACADEMY OF MEDICINE—*Delegates*—Dr. J. A. Hodges, Dr. Fred Hodges, Dr. C. C. Coleman, Dr. A. M. Willis, Dr. Stuart Michaux, and Dr. L. T. Price, all of Richmond. *Alternates*—Dr. C. M. Miller, Dr. Carrington Williams, Dr. T. D. Jones, Dr. R. F. Gayle, Dr. M. Grove-Hagen, and Dr. W. B. Blanton, all of Richmond.

ROANOKE ACADEMY OF MEDICINE—Dr. T. A. Kirk, Roanoke, and Dr. Everett E. Watson, Salem, *delegates.*

ROCKBRIDGE—Dr. E. P. Tompkins, Lexington, *delegate;* Dr. M. T. Vaden, Buena Vista, *alternate.*

RUSSELL—Dr. S. C. Couch, Cleveland, *delegate;* Dr. T. T. McNeer, Dante, *alternate.*

SOUTHAMPTON—Dr. E. A. deBordenave, Franklin, *delegate.*

SOUTHWESTERN—*Bland*—Dr. A. B. Woolwine, Ceres, *delegate.*

Washington—Dr. F. H. Smith, Abingdon, *delegate;* Dr. W. H. Teeter, Bristol, *alternate.*

Smyth—Dr. Z. V. Sherrill, Marion, *delegate;* Dr. R. E. Hughes, North Holston, *alternate.*

Wythe—Dr. J. M. Miller, Wytheville, *delegate;* Dr. E. M. Chitwood, Wytheville, *alternate.*

Carroll—Dr. R. R. Goad, Hillsville, *delegate;* Dr. C. B. Nuckolls, Hillsville, *alternate.*

Grayson—Dr. W. P. Davis, Galax, *delegate;* Dr. J. K. Caldwell, Galax, *alternate.*

Pulaski—Dr. R. H. Woolling, Pulaski, *delegate;* Dr. R. F. Thornhill, Pulaski, *alternate.*

Montgomery—Dr. M. B. Linkous, Blacksburg, *delegate;* Dr. J. A. Noblin, Radford, *alternate.*

Giles—Dr. W. C. Caudill, Pearisburg, *delegate;* Dr. K. D. Graves, Pearisburg, *alternate.*

WARREN-RAPPAHANNOCK-PAGE — *Warren*—Dr. L. F. Hansbrough, Front Royal, *delegate;* Dr. Giles Cook, Front Royal, *alternate.*

Rappahannock—Dr. E. R. Browning, Flint Hill, *delegate;* Dr. Jas. G. Brown, Woodville, *alternate.*

Page—Dr. Geo. H. Long, Luray, *delegate;* Dr. B. C. Shuler, Shenandoah, *alternate.*

The Virginia Pediatric Society

Will hold its annual meeting Wednesday, October 19, 1927, at 1 P. M. at a luncheon at Petersburg Hotel, during the meeting of the Medical Society of Virginia in that city. This will be a subscription luncheon and all doctors especially interested in pediatrics, whether members of the Pediatric Society or not, are invited. There will be a kind of Round Table discussion, which will be participated in by Drs. Franklin D. Wilson, of Norfolk, St. Geo. T. Grinnan, of Richmond, and L. T. Royster, of University.

On this day, there will also be several pediatric papers presented before the Medical Society of Virginia and all pediatricians are urged to attend. Dr. N. T. Ennett, Richmond, is president of the Pediatric Society; Dr. L. T. Royster, University, vice-president; and Dr. W. B. McIlwaine, Petersburg, secretary-treasurer.

The Southwestern Virginia Medical Society

Held a well attended meeting in Bristol, Va., September 22nd and 23rd, under the presidency of Dr. Z. V. Sherrill, of Marion. Following the subscription banquet on the first evening, the program was taken up and an interesting one was put over. The symposium at this meeting was on "Pulmonary Tuberculosis". It was decided to hold the next meeting at Marion, Va., March 29th and 30th, 1928. Dr. J. L. Early, of Radford, was elected president, Dr. D. M. Sanders, of Chilhowie, vice-president, and Dr. E. G. Gill, of Roanoke, was re-elected secretary-treasurer. Delegates were also elected to the Petersburg meeting of the State Society.

The Fairfax County Medical Society,

At its meeting held at Herndon, August 4th, elected the following officers for the ensuing year: President, Dr. Wm. Meyer, Herndon; secretary, Dr. W. P. Caton, Accotink, and treasurer, Dr. F. M. Brooks, Fairfax, both of the latter being re-elected. Delegate and alternate to the State Society meeting were also elected.

The Post-Graduate Medical Society of Southern Virginia

Was organized at a meeting in Petersburg, September 12th. This is composed of the counties of Nottoway, Dinwiddie, Prince George, Greenesville, Brunswick, Surry and Sussex. Dr. Wright Clarkson, president of the Southside Virginia Medical Association, was the moving factor in the organization of this society, which has already secured a charter from the State Society and elected delegates and alternates for the Petersburg meeting.

Officers of the new organization are: President, Dr. E. W. Young, Petersburg; vice-presidents, Dr. S. E. Gunn, Hopewell, and Dr. B. J. Atkinson, Emporia; and secretary-treasurer, Dr. W. C. Powell, of Petersburg. The following compose the Judiciary Committee: Dr. W. D. Prince, Stony Creek, chairman, and Drs. W. W. Bennett, Blackstone, and D. C. Mayes, Church Road. Dr. F. N. Mallory, Lawrenceville, is chairman of the committee on public health and legislation, other members of this committee being Drs. W. W. Seward, Surry, and M. H. Tredwell, Emporia.

The Society will hold seven meetings a year —one in each of its seven counties. The next meeting will be held in Surry on the second Tuesday in November.

A special feature of this society is its "Steering" committee of which Dr. Wright Clarkson, Petersburg, is chairman. The committee will be composed of all members who apply in writing to the chairman on or before the first of each fiscal year. Failure of a member to attend at least six meetings a year, without sending a good written excuse to the chairman, will automatically bar one from being a member during the following year. This committee will have charge of arranging the programs. It is planned that the first half of each meeting will be "journal hour" and will be in control of members residing in the county in which the meeting is being held.

Rockingham County Medical Society.

Rockingham County doctors have re-organized their society. Dr. Noland M. Canter, has been elected president; Dr. J. E. Wine, vice-president; and Dr. Howard Armstrong, secretary-treasurer. All officers are of Harrisonburg, Va.

The Medical Association of the Valley of Virginia

Held its regular semi-annual meeting in Winchester, September the 29th, under the presidency of Dr. A. F. Robertson, Jr., of Staunton. About forty physicians were in attendance. A number of interesting papers were read, the feature paper being one on "Conditions That Simulate Pneumonia" by Dr. E. J. G. Beardsley, of Philadelphia. Discussion on this paper was opened by Dr. Kenneth Bradford, of Staunton. Dr. Charles O. Dearmont, White Post, was elected president for the ensuing year. Other officers are: vice-presidents, Drs. L. M. Allen, of Winchester; H. G. Middlekauff, of Weyers Cave; and Dr. J. A. Riffe, of Covington. Dr. L. F. Hansbrough, Front Royal, was elected treasurer, and Dr. Allen T. Hawthorne, Winchester, secretary. The Spring session will be held in Harrisonburg, in May, 1928.

Dr. Joseph Caplan,

Of the University of Virginia, class of '25, after two years in Baltimore hospitals, sailed October the 1st, on the Steamship Minnesota for Europe, where he will do post-graduate work in diseases of the ear, nose and throat in Vienna and in other clinics.

Married.

Dr. Cornelius B. Courtney, Newport News, Va., and Miss Genevieve Dellinger, of Lincolnton, N. C., September 14.

Dr. Joshua Milburn Dougherty, Jr., Gate City, Va., of the class of '25, Medical College of Virginia, and Miss Alma M. Turner, Mineral, Va., September 5.

Dr. Palmer A. Shelburne, now stationed at the Marine Hospital, Baltimore, Md., and Miss Ruth Elfreth Friend, Drakes Branch, Va., August 27. Dr. Shelburne was graduated from the Medical College of Virginia, last June.

Dr. Robert Edward Feagans, of the class of '25, University of Virginia, Department of Medicine, now assistant house surgeon at the University Hospital, and Miss Lois Straley, Lynchburg, Va., September 10.

Dr. Maurice Matthew Lynch, Jr., Hackensack, N. J., and Miss Theresa Murphy, Montclair, N. J., October 1. Dr. Lynch graduated from Medical College of Virginia in 1925, following which he accepted an internship at Holy Name Hospital, Taeneck, N. J.

Dr. Glynne Brown, Texarkana, Ark., of the class of '25, University of Virginia, and Miss Evelyn Calvert Via., Orange, Va., September 24.

The Mid-Tidewater Medical Society,

Composed of the seven counties in the peninsula between the York and Rappahannock Rivers, will hold its next meeting in West Point, Va., at the Community House, on October the 26th, at 10 A. M. A large attendance is requested. Dr. James W. Smith, of Hayes Store, is president, and Dr. Malcolm H. Harris, of West Point, secretary.

Dr. Hunter Williams

Is re-building his home at North Garden, Va., near the site of the one he lost by fire a little over a year ago.

Dr. Thomas B. Washington,

Of Richmond, left the middle of September for New York City, where he will spend the next six months taking a post-graduate course in urology at the New York Polyclinic Hospital.

Dr. P. K. Graybill,

Of Fincastle, Va., now living in Arizona, has returned to Cactus, Arizona, after spending the past year at Lake Pleasant, that state, where he had charge of the emergency medical work in connection with the building of a big dam to store flood waters for irrigation of forty thousand acres of desert land.

Doctors Interested in American Legion.

Drs. E. J. Nixon, L. S. Early and W. A. Reese, of Petersburg, Va., have been elected members of the executive committee of the American Legion, Post No. 1, of that city, for the ensuing year.

Appointed Chief Surgeon of Norfolk and Western Railway.

Dr. W. R. Whitman, Roanoke, Va., has been appointed chief surgeon of the Norfolk and Western Railway, succeeding Dr. Sparrell S. Gale, deceased.

Dr. H. Taylor Hawkins,

Clover, Va., was appointed by Adjutant General Sale as delegate from the Virginia National Guard to the Association of Military Surgeons, which was to be in Carlisle, Pa., October 6-8.

Dr. R. Cannon Eley,

Of the class of '25, University of Virginia, Department of Medicine, after several months at the Willard Parker Hospitl, New York City, has gone to Boston, where he will be connected with the Children's Hospital, for the next fifteen months.

Southern Medical Association.

Officers of the Association and members of the local committee on entertainment are making plans for a "big" meeting in Memphis, November 14-17, under the presidency of Dr. J. Shelton Horsley, of Richmond. Memphis has one of the most modern convention auditoriums in the South and the greater part of the Association's activities can be held under the one roof. Two days will be devoted to clinical sessions and two to section meetings. Every Southern physician who is a member of his State organization is eligible to membership in the Southern Medical. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., is secretary-manager of the Association.

The Southern Association of Anesthetists

Will hold its sixth annual meeting at the Claridge Hotel, Memphis, Tenn., November 14th and 15th.

This organization meets annually in conjunction with the Southern Medical Association. Its objects are: to advance the science and art of anesthesia; to stimulate interest in all forms of anesthesia and analgesia—general, regional and local; to advance and improve the status of anesthesia administration as a well defined specialty; and to offer and provide a Forum for the presentation and discussion by all interested, of phases and problems of anesthesia which surgeons, obstetricians and anesthetists constantly encounter.

The Southern Association of Anesthetists is a regional unit of the Associated Anesthetists of the United States and Canada. Others serving various geographical sections are the Eastern, Mid-Western, Pacific Coast and Canadian Societies of Anesthetists. The parent body, the Associated Anesthetists of the United States and Canada, under the enthusiastic and brilliant leadership of the Secretary-General, Dr. F. H. McMechan, of Ohio, has wielded an influence for better, safer, more scientific anesthesia that can hardly be overestimated. Dr. C. Wm. Hoeflich, Houston, Texas, is president of the Southern branch.

An exceedingly interesting program has been arranged for the Memphis meeting. Any one interested should communicate with W. Hamilton Long, M. D., Secretary, Francis Bldg., Louisville, Ky.

Red Cross Membership as a Link With Active Days of War Service.

November 11, 1918—November 11, 1927: nearly ten years. The past year thoughtful people everywhere have meditated on the fact this is the tenth anniversary of America's entry into the World War, that the coming year will be the tenth since we emerged from that conflict to shift our frienzied war activities into the more measured pace of normal life. There are few material links connecting us with those days. The vast uniformed forces which were camped everywhere have merged into the personnel of shop and office, coming and going with the rest of their fellows. Only one group

of that army still stands apart; they are the disabled.

There are still other reminders of war days; the special occasions when the American Legion parades, and the Annual Roll Calls of Red Cross Membership, which have taken place each year from Armistice Day to Thanksgiving, since the war. Not everyone can belong to the American Legion; that privilege is reserved for those who served in the uniformed ranks of the Nation in war. But there is one service which is universal, one through which the great majority of the American people in war time rendered one of their obligations to the country and to their sons; through membership in the American Red Cross. Many of its war-time members have never permitted themselves to be demobilized from that service. For many thousands of others each year, the Roll Call, —which this year is from November 11-24—is an opportunity to identify themselves once more with an organization of humanitarian helpfulness to the whole world, and the demand for whose services is as strong each year as it was ten years ago.

The Association of American Medical Colleges,

Meeting in Montreal, Canada, October 24, 25 and 26, will have on an excellent scientific program. Headquarters will be at the Mount Royal Hotel and the meetings will be held in the Anatomy Building of McGill University. The afternoons and evenings will be given over to sight seeing and entertainments.

Dr. James W. Smith

Recently returned to his home at Hayes Store, Virginia, after spending his vacation visiting in New York and Canada.

Dr. W. Randolph Graham,

Of the class of '25, Medical College of Virginia, has located in Richmond, where he will be associated with Dr. Warren T. Vaughan in the practice of gastroenterology. Dr. Graham has been associate in medicine at the Peter Bent Brigham Hospital, Boston, and assistant in medicine at the Harvard Medical School.

New Activities of the National Children's Bureau, Peru.

Among the new undertakings of the Children's Bureau of Peru during 1926, according to the annual report of the bureau for that year, were the opening of public squares for children's playgrounds and efforts to prevent begging by children in the streets. The bureau has also been advocating the opening of nurseries in connection with hospitals, for children whose mothers are receiving hospital care. Other activities of the bureau include studies of medical and social problems, legal aid to mothers, health centers for infants, summer camps for children, and the preparation of modified milk for distribution. The bureau also gives financial aid to private child-caring agencies.

Dr. and Mrs. James D. Clements,

Of Ordinary, Va., spent their summer vacation at Virginia Beach.

Dr. C. L. Woodbridge,

Recently returned from the missionary field in China, after spending the summer at Montreat, N. C., has located at Montgomery, W. Va., instead of Pulaski, Va., as he at first planned.

Medical Officers Wanted for Veteran's Bureau Hospitals.

Applications for junior medical officer (interne) will be rated as received by the Civil Service Commission, Washington, D. C., until December 30, 1927. This examination is to fill vacancies in Veterans' Bureau Hospitals throughout the United States and vacancies in positions requiring similar qualifications. Full information may be obtained from the U. S. Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. Civil Service Examiners, at the post office or custom house in any city.

Prizes for Essay in the Cause of the Family Doctors.

Realizing that the "family doctor" does not have the influence or the income which he should, a prominent doctor of North Carolina has provided the funds for three prizes—one each of $250, $150 and $100—to be awarded for the best essays on "How the Family Doctor Can Best Increase His Usefulness and His Income." It is stated that this contest is open to all regular doctors in Virginia, North and South Carolina, and it is urged that they write essays on this subject. The award will be decided by a committee of doctors from the three states.

Southern Medicine and Surgery, Charlotte, N. C., through which this prize is offered, will have the privilege of publishing any of the essays in the interest of doctors in general.

Essays have to be submitted to *Southern Medicine and Surgery* before December 1, 1927.

It is hoped that Virginia doctors will take advantage of this offer to submit their views on this subject which should be of great interest.

Dr. and Mrs. H. A. Tabb,

Gloucester, Va., returned home the middle of September from a motor trip through Pennsylvania and thence via Washington, D. C., through the Valley of Virginia.

Dr. W. H. Batte, Jr.,

Formerly of Jarratt, Va., is now connected with the medical department of the Norfolk and Western Railway Company, at Bluefield, West Virginia.

Dr. J. Blair Fitts,

Richmond, Va., announces removal of his offices to 917 West Franklin Street, this city.

The Southside Virginia Medical Association

Held its quarterly meeting in Richmond, September 13th, as guests of the McGuire Clinic. There was a symposium on "The Medical and Surgical Aspects of Abdominal Pain" in addition to a number of other interesting papers. Immediately following the scientific program those in attendance adjourned to the country home of Dr. Stuart McGuire, where they were entertained at dinner. Dr. Wright Clarkson, Petersburg, is president, and Dr. R. L. Raiford, Franklin, secretary of this Association.

Public Playgrounds in Baltimore.

In Baltimore this summer the Playground Athletic League has been operating 134 playgrounds and 6 swimming pools under trained leadership and supervision. The regular daily schedule of each playground varied, and once during the summer all the playgrounds took part in a big play festival held at the stadium. On August 11, the date set for the festival this year, about 3,000 children were brought together for a demonstration of games and dances. During the last week of August each playground had special programs for visitors. Twenty of the playgrounds have conducted baby days this season, when children under three years of age were examined by doctors and nurses.

Medical College of Virginia Alumni Banquet.

The Alumni Association of the Medical College of Virginia will have a banquet and a general Jollification Get-Together meeting at the Petersburg Hotel, Petersburg, Va., during the meeting of the Medical Society of Virginia. Banquet will take place at 6:30 P. M. October 19th. The General Chairman of this Committee is Dr. Everett E. Watson, Salem, Va. The Petersburg Committee consists of Drs. Geo. Reese and John Harwood. Dr. Roshier W. Miller, President of the Alumni Association and Dr. Howard Urbach, President of the Richmond Chapter, have charge of the program.

General "roust-abouts" and "boosters" are: Drs. Greer Baughman, R. D. Garcin, Clyde F. Ross, Arthur S. Brinkley, F. H. Beadles, H. W. Decker, Chas. Phillips, and Thomas D. Jones.

Get your tickets early. There will be plenty of fun, no long speeches, and positively no solicitations for funds.

Come One. Come All. Let your lights be shining. Except for the muddy Appomatox River, Petersburg is dry.

Dr. B. S. Yancey,

Who was stationed at the Marine Hospital, Baltimore, Md., as an assistant surgeon (R) in the U. S. Public Health Service, following his graduation from the University of Virginia in 1926, has been appointed health officer at Chase City, Va., where he will do general practice in connection with his other duties.

Dr. I. R. Wagner

Has been transferred from the Edw. J. Hines, Jr. Hospital, at Maywood, Ill., to the U. S. Veterans' Hospital, Jefferson Barrocks, Mo.

Dr. Claude Moore,

Roanoke, Va., who went abroad with the American Legionnaires, is visiting clinics in Berlin and Vienna before returning home.

Dr. Bittle C. Keister,

Washington, D. C., announces that he has just returned from the University of Minnesota and the Mayo Clinic, where he did research work in general medicine and surgery and has resumed his practice, with offices at 1315 Fern Street, Northwest.

Dr. Israel Brown,

Norfolk, Va., was elected president of the Virginia Department of the American Legion, at its meeting in Newport News, early this month. He was one of the Virginia members

who attended the national gathering of the Legion in Paris last month.

The Association of Surgeons of the Chesapeake and Ohio Railway

Held its annual meeting at Virginia Beach, early in September, with an attendance of more than four hundred surgeons and members of their families. Dr. J. E. Cannaday, Charleston, W. Va., was the presiding officer. Following the scientific program, a business session was held and Dr. Wm. T. Graham, Richmond, Va., was elected president; Dr. Chas. C. Garr, Lexington, Ky., first vice-president, and Mr. G. E. Meanley, Richmond, Va., was re-elected secretary.

Dr. Henry L. Townsend,

Who recently completed an internship at Memorial Hospital, Richmond, has located at Marshall, Va. Dr. Townsend was a member of the class of '26, Medical College of Virginia.

Dr. A. W. Kelly,

Of the class of '26, Medical College of Virginia, upon completion of his internship at Mercy Hospital, Baltimore, Md., has located at 1412 Light Street, Baltimore, where he will be engaged in general practice.

Dr. H. B. Mulholland,

University, Va., left about the first of September for a year's study abroad.

Doctor's Son Loses Sight of Eye.

Holland Robinson, fifteen year old son of Dr. and Mrs. Julian Robinson, of Danville, Va., had the misfortune to lose sight in his right eye as result of an accident at school. He had called to another boy on a porch above him at school to throw him a broom. It was dark and the handle of the broom, falling first, struck young Robinson in the right eye, rupturing the eyeball.

News of Medical College of Virginia.

The central school of nursing at the Medical College of Virginia, Richmond, has matriculated in its preliminary or preclinical course in the basic sciences which covers one semester fifty students from four of the hospitals of Richmond in addition to fifty-six students who are residents in college and students in its school of nursing. This is the second year the central school has been in operation; students are expected to meet college entrance requirements.

Construction work has begun on the new dormitory at the Medical College of Virginia, Richmond, which will accommodate 134 young women, chiefly of the school of nursing. There will be four dormitory floors, each with an ample sun porch. On two additional floors dining room, social, and recreational, and certain teaching facilities will be provided.

In the school of dentistry of the Medical College of Virginia, Richmond, a new course for dental assistants has been inaugurated this year. Applicants for admission must meet college entrance requirements and spend one year in residence. This course is designed to equip young women to assist the dentist in usual office and certain laboratory routine. It is not a course for dental hygienists.

New appointments at the Medical College of Virginia, Richmond, for the current session are: Dr. Sidney S. Negus, professor of chemistry; Dr. J. Garnett Nelson, professor of clinical medicine; Dr. William B. Porter, professor of medicine; Dr. Lewis C. Pusch, associate in pathology; Dr. J. E. Daugherty, instructor in medicine; Dr. W. A. McGee, instructor in pediatrics; Dr. Randolph E. Anderson, assistant in surgery; Dr. R. B. Easley, assistant in neurological surgery; Dr. G. H. Snead, assistant in otolaryngology; Dr. T. B. Washington, assistant in surgery; Dr. W. B. Massey, assistant professor of pedonontia; Miss Altha Cunningham, associate in art; Mr. J. G. Jantz, associate in anatomy; Dr. W. Tyler Haynes, assistant in dental technics; Dr. J. R. Fleet, assistant in operative dentistry; Dr. R. A. Williams, assistant in prosthetic dentistry; Miss Grace Goodchild, R. N., nurse; Dr. J. G. Forbes, assistant professor of chemistry; Professor Haynie H. Seay, Jr., instructor in economics and citizenship; Dr. W. P. Barnes, instructor in surgical diseases; and Dr. J. W. Keever, instructor in elementary physiology.

Promotions for 1927-28 include: Dr. Paul V. Anderson to associate professor of nervous and mental diseases; Dr. W. A. Shepherd to associate professor of medicine; Dr. James H. Smith to associate professor of medicine; Dr. J. M. Whitfield to associate professor of medical jurisprudence, ethics, and economics; Dr. Pauline Williams to associate professor pathology; Mr. Clifford W. Skinner to assistant professor of anatomy; Dr. H. DeJ. Coghill to associate in nervous and mental diseases; Dr. R. H. Courtney to associate in ophthalmology;

Dr. O. B. Darden to associate in nervous and mental diseases; Dr. G. H. Preston to associate in nervous and mental diseases; Dr. L. W. Whitehead to associate in roentgenology; Dr. D. G. Chapman to instructor in medicine; Dr. C. A. Folkes to associate in ophthalmology; Dr. N. H. Turner to associate in ophthalmology; Dr. M. B. Rudd to associate professor of prosthetic dentistry.

Dr. William B. Porter,

Whole-time professor of medicine at the Medical College of Virginia, has entered upon his duties with offices in the Memorial Hospital. He will give certain time during the day to private consultation work.

University of Nebraska Offers Courses in Child Development.

The home-economics department of the University of Nebraska, during the summer sessions of 1924 and 1925, offered courses in child development with a nursery school as a laboratory for student observation. These courses were introduced in order to meet a need of Nebraska home-economics teachers. During the school year 1926-27 the work was made a part of the regular curriculum, with the classes and laboratory open to junior and senior home-economic students and others who were interested. The nursery school had an enrollment of twelve children, and the city health department co-operated by giving the services of one of its visiting nurses for health inspection each morning, and a group of pediatricians in Lincoln gave each child a complete physical examination twice during the year. The division of nutrition of the home-economics department of the university is conducting physical-growth and nutrition studies, and the department of educational psychology directs the mental testing.

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons

Held its annual meeting at Asheville, N. C., September 15-17, inclusive, under the presidency of Dr. John Osborn Polak, of Brooklyn, N. Y. Virginia members in attendance were Dr. L. A. Calkins, University, and Drs. M. P. Rucker and James M. Whitfield, Jr., of Richmond. Dr. Palmer Findley, of Omaha, Nebr., was elected president for the coming year, and Dr. James E. Davis, of Detroit, Mich., was re-elected secretary. It was voted to hold the next meeting in Toronto, Canada, in September, 1928.

Dr. and Mrs. Herbert W. Lewis

And daughter, of Dumbarton, Va., spent their vacation in September at Afton, Va., and on a trip through the Valley of Virginia and West Virginia.

Dr. C. O. Foree,

Formerly of Pocahontas, Va., has moved to Athens, Tenn.

Dr. C. W. Trexler,

Of the class of '26, University of Virginia, Department of Medicine, following a service as house physician at French Hospital, San Francisco, Cal., has located in San Diego, Cal. He is associated with Drs. Wegeforth, with offices in Granger Building, and his work will be mainly surgical.

Dr. F. F. Davis,

Sassafras, Va., recently returned from his vacation which was spent in Pennsylvania.

New Step In International Relations of Physicians.

The cordial relations of the physicians of America, North and South, and their colleagues of the Old World were further expressed by the appointment of American representatives to the editorial cabinet of the *Acta Dermato-Venereologica* published under the direction of Dr. Johan Almkvist, of Stockholm, Sweden. The nominees are: Howard Morrow, of San Francisco, Howard Fox, of New York, J. B. Shelmire, of Dallas, D. R. Smith, of Toronto, Pardo Castello, of Havana, and Herman Goodman, of New York.

The *Acta Dermato-Venereologica* publishes original contributions in French, German, or English within the fields of dermatology, urology, and social hygiene, and items of interest of persons or progress in these specialties.

American literary contributions should be addressed to Dr. Herman Goodman, 18 East 89th Street, New York City.

"Belroi" to be Opened.

The Walter Reed Commission of the Medical Society of Virginia announces that "Belroi", the birthplace of Dr. Walter Reed, in Gloucester County, Virginia, has been renovated and will be formally opened to the public on Saturday afternoon, October the 15th, at 2 P. M. A most attractive program will include speeches and music by one of the U. S. Army bands from Ft. Eustis.

Dr. James H. Hargrave, Jr.,

Petersburg, Va., was painfully hurt about

the middle of September, by the explosion of gasoline on a yacht at the Hummell Ross dock, that city. Dr. Hargrave was blown through the top of the yacht and it is almost miraculous that he was not seriously as well as painfully hurt.

The American Board of Otolaryngology

Will hold an examination in Memphis, Tenn., November 14, 1927—the first day of the Southern Medical Association meeting. As the Board seldom meets in the South, this will be an excellent opportunity for those from this section who may wish to take the examination. The certificate of this Board is stated to be the most valuable of its kind in the world and is certainly the most valuable certificate that any Ear, Nose and Throat man in America possesses.

All applications and communications concerning this examination should be addressed to Dr. W. P. Wherry, 1500 Medical Arts Building, Omaha, Nebraska.

Dr. H. L. Burwell,

For many years a practicing physician at Chase City, Va., has moved to Roanoke, Va.

The American Public Health Association

Is to hold its annual meeting in Cincinnati, Ohio, October 17-21, with headquarters at Hotel Gibson. Any health worker is eligible to membership in this organization. In addition to the usual attractive scientific program, pleasant entertainment is being arranged for the visitors. Mr. Homer N. Culver, 370 Seventh Avenue, New York City, is executive secretary of the Association.

Census of Institutions.

The U. S. Department of Commerce has just made public a preliminary announcement of the results of the census of state and federal institutions for the feebleminded and epileptics, hospitals for mental disease, and prisons and reformatories. Returns from thirty-six states on institutions for the feebleminded and epileptics, covering sixty institutions, shows an increase of 8.6 per cent of first admissions over reports in 1922; reports from thirty states covering 105 hospitals for mental disease show an increase of 7.5 per cent over 1922; and returns from thirty-one states covering fifty-eight prisons and reformatories show an increase of 28.3 per cent on 1922 figures. In each case, the first admissions per 100,000 population have increased more rapidly than the general population, though this increase may be largely attributable to an expansion of the capacity or facilities of the institutions in some states and the effectiveness of local machinery in bringing these cases under the care of institutions.

Dr. I. K. Briggs

Has returned to his home in South Boston, Va., after a visit to clinics in Chicago and Rochester, Minn.

Dr. Lewis A. Law,

Upon completion of his internship at George Ben Johnson Memorial Hospital, Abingdon, Va., has located in Alberta, Va., for the practice of medicine.

Dr. and Mrs. E. J. Nixon,

Petersburg, Va., suffered quite painful injuries and narrowly escaped death, on September the 30th, when their automobile was struck by another on the Petersburg Turnpike. Their conditions were reported as favorable as we go to press.

Wanted—

A physician for a good country practice. If interested communicate with Zannie B. Givens, Newport, Va., R. F. D. 1, Box. 69. (*Adv.*)

Obituary

Dr. Frank Stanley Hope,

Prominent physician of Portsmouth, Va., died in that city, September 26th, following an operation. He was seventy-two years of age. Dr. Hope was graduated in medicine from the University of Virginia in 1876, shortly after which he commenced practicing in Portsmouth. He was in active practice to the time of his last illness and in addition was active in community welfare work and in politics. He served a term as mayor of Portsmouth, for several terms as health officer of that city during which time he was also a member of the former State Board of Quarantine Commissioners which had much to do with quarantine regulations over the port of Hampton Roads, and served a number of years on the Central State Democratic Committee as a member from the Second District. Dr. Hope had been a member of the Medical Society of Virginia since 1880, was a member of the Norfolk County Medical Society, was a Mason and a member of a number of fraternal and civic organizations. His wife and a daughter survive him.

Dr. Wade Hampton Saunders,

Roanoke, Va., died at his home in that city, September 19th, death being due to heart trouble. Dr. Saunders was born in Bedford County, Virginia, fifty years ago and upon completion of his academic education, studied medicine at the former University College of Medicine, Richmond, from which he graduated in 1903. He had been an active member of the Medical Society of Virginia since that same year. His burial was conducted with Masonic orders. His wife survives him.

Dr. John Wesley Bovee,

Washington, D. C., honorary member of the Medical Society of Virginia, died September 3rd, as the result of injuries received from a fall. He was a native of New York State and was sixty-five years of age. Dr. Bovee graduated in medicine from the Medical Department of Columbian University, Washington, in 1885, after which he located in that city. He was emeritus professor of gynecology in George Washington University Medical School; a member and ex-president of the Medical and Surgical Society of the District of Columbia, the American Gynecological Association, and the Southern Surgical Association, and a member of numerous other medical organizations. He was for many years gynecologist to several of the Washington hospitals.

Dr. Charles William Massie,

Richmond, Va., for over thirty years a practicing physician in this city, died September 26th, after being in bad health for about three years, though he kept up active practice until a year ago. He was a native of Amherst County, Va., and seventy-one years of age. His medical education was received at the University of the City of New York, from which he graduated in 1880. He was at one time a member of the Medical Society of Virginia. His wife and several children survive him.

Dr. John R. Atwell,

Wicomico Church, Va., formerly a member of the Medical Society of Virginia, died in a Washington hospital, September 13, at the age of fifty-three years. He was a native of Washington and graduated in medicine from the National (now George Washington) University, that city, in 1898.

Dr. Richard Fishburne,

For over forty years a practicing physician in Leesburg, Va., died in Staunton, Va., September 14, at the age of seventy-six years. He took his degree in medicine from the Kentucky School of Medicine in 1876 and was at one time a member of the Medical Society of Virginia. He is survived by daughter who is now a missionary in Japan.

Resolutions on the death of Dr. Charles Venable Carrington.

Dr. Charles Venable Carrington was born in Charlotte County, Virginia, July 29, 1866. He taught school for several years at Chatham in order to earn money to attend the University of Virginia. While at the University he was secretary to his uncle, the late Colonel Charles S. Venable, professor of mathematics. He graduated in medicine at the University of Virginia in 1889, and became an interne at the old St. Luke's Hospital, Richmond, Virginia, under the late Dr. Hunter McGuire.

He married Mrs. Grant, a widow, who was Miss Avis Walker. The union was ideal, and he cared for her with the tenderest affection throughout his life.

He was physician to the Spring Street Home for twenty years, and for twelve years was surgeon to the State Penitentiary, being appointed by Governor J. Hoge Tyler. He was surgeon to the Richmond Street Railway Company for many years, and his fearless and courageous conduct during the troublesome times of the strike, about twenty-five years ago, was widely noticed. He was surgeon to the Richmond Fire Department when he died. He was an ex-president of the Richmond Academy of Medicine and Surgery.

His health for the last few years had appeared to be good. He died after a few hours' illness at seven o'clock in the morning of July 22nd, apparently from angina pectoris.

Dr. Carrington was the particular champion of the down-trodden and the oppressed. A sense of injustice always brought forth the strongest reaction from him. His generosity was complete. He was under all conditions willing to share everything he had with his friends, and he seemed to think as a matter of course that others would do the same thing with him.

Siding with the "under-dog" was his natural instinct. His work at the Spring Street Home, and as surgeon for the Penitentiary, are instances of this trait of character. He was the chief factor in mitigating much of the harsh treatment of the inmates of the Penitentiary while he was surgeon there. He was a pioneer in the advocacy of sterilization of the habitual criminal, a policy which has been adopted by several states and carried out with apparent benefit by the State of California. This contribution to sociology is just beginning to be appreciated.

In his big heart there was no place for sham or hypocrisy. The love of his fellowman crowded out these small vices.

Be it Resolved, Therefore, that the Richmond Academy of Medicine wishes to express a deep sense of loss in the death of a faithful fellow and ex-president, Dr. Charles Venable Carrington, and to extend its sincere and heartfelt sympathy to his widow and the rest of his surviving family.

Robert C. Bryan,
Thomas W. Murrell,
J. Shelton Horsley, *Chairman.*
Obituary Committee.